

*Long*  
**Canadian  
Public Health Journal**

OCT 23 1934

Devoted to the Practice of  
**PREVENTIVE MEDICINE**

---

VOLUME 25

October, 1934

NUMBER 10

**PUBLIC HEALTH AND MEDICAL CARE**  
GRANT FLEMING

**THE DEVELOPMENT OF THE CANADIAN FAMILY**  
A. J. PELLETIER

**MORBIDITY AND MORTALITY IN INDUSTRY**  
R. VANCE WARD

**PUBLIC HEALTH IN UPPER CANADA**  
K. F. BRANDON

**DUTIES OF HEALTH UNITS' INSPECTORS**  
JEAN GREGOIRE

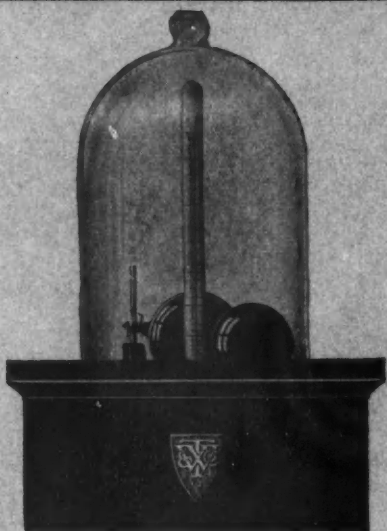
**REPORTING OF COMMUNICABLE DISEASES**  
A. R. FOLEY

*Laboratory Section Meeting  
Toronto, December 21, 1934*

---

*Published by the*  
**CANADIAN PUBLIC HEALTH ASSOCIATION**

*Editorial and Business Offices:*  
105 BOND STREET, TORONTO 2



## DON'T PLAY HIDE AND SEEK WITH TROUBLE

It's the unseen, unknown trouble that eventually develops into a serious difficulty. That's just as true of chlorinators as it is of any other equipment. But—there is no need of your playing hide and seek with trouble in W&T (made in Canada) Visible Control Vacuum Chlorinators because the working parts are under the glass bell jar—always in plain sight.

That's one reason why annual maintenance costs average less than 1%.

Technical Publication 38 describes visible control chlorinators in detail. Ask for a copy.

## WALLACE & TIERNAN

LIMITED

*Manufacturers of Chlorine and Ammonia  
Control Apparatus*

**345 Sorauren Avenue, Toronto, Ontario**

301 Bank of Hamilton Bldg., Winnipeg, Manitob.  
New Birk's Bldg., Montreal, Quebec



"The Only Safe Water

is a Sterilized Water"

SA-50









## The Relationship of Public Health to Medical Care\*

GRANT FLEMING, M.C., M.D., D.P.H., F.R.C.P.(C.)

*Professor of Public Health and Preventive Medicine, McGill University,  
Montreal, Quebec*

IN order to gain a better perspective of the present-day relationship between public health and the provision of organized medical care, it is desirable to look back upon the development of the modern public health movement. By doing so, it will be seen how public health has been led inevitably first to become interested, and then to assume responsibility for the provision of an ever-increasing amount and variety of medical care.

During the period when public health concentrated its attention upon environmental conditions, the provision of medical care was not included in the public health programme, but just as soon as Pasteur's work revealed man as the reservoir of his own infections, attention was shifted from the environment to the individual. Isolation and quarantine were altered from routine measures founded largely upon fear to procedures based upon a reasonable understanding of the manner of spread of the communicable diseases.

It was at this time that the communicable disease hospital assumed importance as a means of establishing isolation by the removal of the focus of infection—the case—from the home, and so from further contact with others. In other words, the communicable disease hospital became an essential part of the public health organization for the control of communicable diseases. These hospitals were usually administered by the public health departments. Having accepted responsibility for communicable disease hospitals, in order to prevent the spread of disease, the public health authority was, of necessity, brought to take an active interest in the actual treatment of individual patients or in the provision of medical care for those suffering from communicable diseases.

As an evidence of how this provision of medical care for communicable disease is now being accepted as a part of the public health programme, we find, in Section 58.—(1) of The Public Health Act for Ontario, that

"The medical officer of health or local board shall make effective provision for the public safety by removing such person to a separate house, or by otherwise isolating him, and by providing medical attendance, medicine, nurses, and other assistance and necessaries for him."

\*Presented at the Twenty-Third Annual Meeting of the Canadian Public Health Association, Montreal, Quebec, June, 1934.

Institutional care for those suffering from tuberculosis is recognized as an essential part of any programme for the control of this disease. There are many who believe that institutional care is the most important item in the tuberculosis programme. We observe that tuberculosis mortality rates are lowest where there is the highest ratio of sanatorium beds to the number of tuberculosis deaths. Sanatoria are conducted usually by private organizations, to which organizations the province and the municipality make a regular allowance for the care of indigent cases.

Saskatchewan has the most satisfactory organization for the sanatorium care of the tuberculous. By an amendment to the Saskatchewan Sanatoria and Hospitals Act, effective in January, 1929, sanatorium care was made readily and freely available to all requiring such care. The province contributes one dollar per patient per day. The remainder of the operating cost is borne by all the urban and rural municipalities proportionately, on the basis of their equalized assessments.

The great advantage of this arrangement is that the patients are promptly admitted, the question of ability to pay is not raised, and the securing of treatment does not, as is the case in some other provinces, wait upon the signature of some local official, who may be more concerned about the cost of the treatment to be charged against his municipality than he is as to the individual's need for sanatorium care and the protection of the public. Saskatchewan evidently looks upon tuberculosis as a province-wide problem and one to be dealt with on that basis, so the costs of sanatorium care for all cases are spread over the whole province.

Venereal disease, since the Great War, has received the attention of the public health authorities. Perhaps the most effective and practical means available for the control of gonorrhoea and syphilis is to treat those who are infected until they are non-infectious. This is done in the interests of the public rather than the patient. Such an attitude justifies the provision of diagnostic and treatment facilities as part of the public health programme, whether or not the clinics are operated direct by the department of public health.

The provision of medical care by or through departments of government is not new in Canada. Such services were inaugurated early in our history, but it was not until the Department of National Health was created in 1919 that most of the medical services provided by the Dominion Government were concentrated under one department of public health.

The Dominion Government provides for the medical care of a large number of war veterans (pensioners). Sick mariners are cared for, under provisions of the Canada Shipping Act, by the Department of National Health. The care of lepers is assumed by the Dominion Government. The Indians on the reservations, as wards of the Government, are provided with medical care.

The care of those suffering from mental disorders requiring institutional facilities has been accepted by provincial governments as their responsibility. With the exception of those in the Province of Quebec and a few private

institutions, mental hospitals, in Canada, are owned and operated by the various provinces.

The tendency, during the past years, has been to place the mental hospital under the provincial department of health for administration, and to expand this division to include whatever supervision is given by the province in hospital affairs. In the Province of Alberta, for example, it is the Minister of Health who, under the Municipal Hospitals Act, takes the necessary action to establish municipal hospital districts upon requests of the councils of the municipalities concerned.

A wider vision as to the prevention of disease, other than communicable disease, and an appreciation that early diagnosis and early adequate treatment are essentially preventive, has resulted in the inclusion of cancer and heart disease in the modern public health programme, with the result that one province after another has launched a definite organization, usually related to the provincial department of health, for the diagnosis and treatment of cancer.

Public health laboratories, whose field of service used to be definitely limited, are now giving added service in tissue diagnosis and blood chemistry. Biological products are being more freely distributed than ever through public health departments.

Public opinion in Canada has been slowly but surely forcing governments to provide organized medical care, but, up to the present, leaving aside emergency measures devised for the depression, practically the only action governments have seen fit to take to meet this demand is an extension of their public health services, usually on a clinic basis.

In most of the provinces mental hygiene clinics have been organized by the provincial departments of health, being related to the mental hospital service, as a part of expanding provision for dealing with the problem of mental health. The major branch of medicine which has to do with mental disorders is established, in most of Canada, as an organized service under the provincial departments of public health—actually, state medicine. Chest clinics, moving from place to place, are found in most provinces as a part of the campaign conducted by the provincial departments of health for the control of tuberculosis. In Alberta there was organized a travelling clinic to bring medical care to the more remote areas of the province. Public health departments have become more and more responsible for the provision of medical care, and this undoubtedly has been one of the chief causes of friction between health departments and the medical practitioners.

It should be noted that in those places where physicians are being paid for the care of the unemployed, it is usual to bring the department of public health into the arrangement, or, in other words, the municipality generally looks to the health department as the channel through which it arranges for medical care. The law relating to the appointment of municipal physicians in Manitoba provides that the contract between municipality and physician shall be

valid only if made on a form prepared by the Minister of Health and Public Welfare and approved by him.

Through workmen's compensation laws, all the provinces, except Prince Edward Island, have made occupational risk part of the cost of production. The scale of fees for medical care under these laws is established, and so overrules the old right of the physician to arrange his fee with his patient.

#### *The Need for an Adequate Medical Service*

That there is general dissatisfaction on the part of the public and the medical profession with the present system of providing medical care is well known. As a group primarily interested in public health, it is desirable that we give some consideration to this subject, so that we may be prepared to express an opinion as to the relationship of public health to any system for the provision of medical care.

As public health workers, we would subscribe to the principle that every person should receive the full benefits of curative and preventive medicine, irrespective of individual ability to pay, and that practitioners of medicine and others associated in the provision of medical care should receive a reasonable remuneration for their services. We are not particularly concerned as to the name which might be given to the system that is used to bring this about, for, as health workers, we are not fearful of the bogey of state control.

It is impossible to provide an adequate medical service without properly organized departments of public health, which are lacking in many parts of Canada. The Province of Quebec has set an example through a law which gives to the province the right to order the establishment and maintenance of rural health units, and requiring the local areas to tax themselves for the upkeep of these units.

Similarly, as public health workers, we are well aware that an effective public health service cannot be provided unless facilities are readily available for curative medical care. It is futile to teach the need for medical supervision during pregnancy and of medical care at confinement when such care is not available for economic or other reasons. Again, what is the use of advising dental care to a family living on an average wage? In my opinion, it is unsound, in every way, to expect medical practitioners to provide either curative or preventive services unless they are paid for doing so.

If a plan is offered in Canada whereby private practitioners will be paid for their services, then the public health authorities will have to answer the question as to what preventive services should be provided by the private practitioner for which he will be paid.

Health supervision on an individual basis should be more effective than a health clinic service. It is a question as to how practical the health clinic is outside of the larger centres. I would suggest to you that the periodic health supervision of children and of adults, including active immunizations and prenatal care, should be given by the general practitioner.

Experience has shown that tuberculosis, venereal disease and mental hygiene can be dealt with better on a clinic basis, because, in these fields, the active participation of the public health nurse is required to interpret environmental conditions to the physician, and to see that the physician's instructions are carried out in the home.

It would appear that if medical care is provided on some organized basis, it should be possible to define the two fields so that there will be a complete curative and preventive service without any overlapping. In order to attain the fullest co-ordination, it would be desirable to have the provincial department of health responsible for the administration of all medical services, including hospitals, for which the province assumes responsibility.

The plan submitted by the Alberta Commission to provide medical care for all the people of Alberta includes sixty-five cents per caput for preventive care through full-time health units and the recommendation that the area of the local administrative unit for health insurance should coincide with the full-time health units.

The public health authority should have in mind that administrative responsibility does not mean a dictatorship. In England, health insurance is administered centrally by the Ministry of Health, which also appoints the regional officers, who act as medical referees and inspectors. The Ministry, in the exercise of its administrative powers, turns to the British Medical Association for advice and assistance. The strength of health insurance in England is largely due to placing control for the professional side of the medical benefit with the medical profession. This is something for public health authorities to keep in mind, if they are ever called upon to administer some form of organized medical care.

A fair criticism of health insurance is that it has not been preventive in practice and but little in outlook. It is not enough to render lip service to the idea of the practice of preventive medicine by the general practitioner, and then to disregard him in planning public health services. Under whatever name organized medical care is provided, it should make possible the systematic practice of preventive medicine, including periodic health examinations, by the general practitioner.

It is the responsibility of the public health group to plan now, so that they may be able to advise governments, to confer with the medical and other professional groups interested, in order that preventive medicine and public health may be adequately provided for in any scheme of organized medical care which may be evolved for this country.

---

# Moments in the Development of the Canadian Family\*

A. J. PELLETIER

*Acting Chief, Division of Demography,  
Dominion Bureau of Statistics, Ottawa*

THE first attempt at propagating the white race in Canada was rather discouraging, to say the least. Of the 28 persons who wintered at Quebec in 1608, only 8 survived. The first potential family to come to Canada, Michel Colin and his wife, Marguerite Vienne, both died in 1616, the year of their arrival. Michel Colin died on the 24th of March; he was the first person to be buried with the last rites of the Church due to the arrival of missionaries. His wife died on the 15th of July. She was the first European woman to come to this country and the first white woman to be interred in a Canadian burial ground. In the following year, 1617, Louis Hébert arrived with his wife, Marie Rollet, his two daughters, Anne and Guillemette, and a son who died young. This was the first real Canadian family. Their house was the first one erected in Upper Town, Quebec. Hébert was the first colonist and Champlain said of him that "He was the first head of a family who made his living from the soil he cultivated." He did not live long enough, however, to see the result of the courageous example he gave or of the faith he had in the possibilities of this country; an accident was the cause of his death on January 25, 1627, only ten years after his arrival.

## EARLY HISTORY OF THE CANADIAN FAMILY

The first marriage took place in 1618 when Etienne Jonquest married Anne, daughter of Louis Hébert. The following year she brought into the world the first Canadian-born child, but unfortunately both the mother and the child died. This was the first white woman to marry and become a mother in Canada. The second marriage occurred in 1621, when Guillaume Couillard married Guillemette Hébert. He settled on a farm near Quebec city and is supposed to have been the first one to turn the Canadian soil with a plow. The second child was born on the 24th of October, 1621, to the wife of Abraham Martin, but it died at birth. The father of this child cultivated the land which subsequently became the famous Plains of Abraham. No other births occurred until 1624 when one child was born, followed by a birth in each of the years 1625, 1626, 1627, 1629, 1633 and 1634, with an increase to 6 in 1636 and a steady increase from year to year until they reached over 50 in 1643. It is of interest to note that in 1651 Massé Gravel took to the baptismal fount his two infant daughters, the first Canadian-born twins, and in 1697 Guillaume Pagé had the first Canadian-born triplets baptized.

In 1635, the year Champlain died, the accumulated marriages had reached

\*Presented before the Vital Statistics Section at the Twenty-Third Annual Meeting of the Canadian Public Health Association, Montreal, June, 1934.



the total of 8, one of the married being Canadian-born, granddaughter of the first colonist. She was married at the age of 13. Births did not exceed deaths until 1638, when there were 9 births and 2 deaths (not counting 1631 and 1633 with one birth in each year and no deaths). It was not until 1643, or 34 years after the founding of Quebec, that the accumulated births exceeded the number of deaths occurring during this period. This was 22 years after the first registration of birth in the parochial register opened in 1621. In 1751 Bishop Pontbriand ordered that a special register be kept for the registration of stillbirths.

After the surrender of Quebec to the British in 1629, the accumulated vital statistics showed 3 marriages, 7 births and 41 deaths, and the 45 white inhabitants of New France included 4 families comprised of 4 married couples and 7 children, but 10 years later, in 1639, among the 274 inhabitants of New France the native born accounted for 5 married women, 30 boys and 14 girls.

#### GOVERNMENTAL AIDS TO COLONIZATION AND POPULATION

The families were not increasing very rapidly in number, but they were large and were encouraged by financial aid from the government of the day to augment the number of children. The "allocations familiales" which have been lately advocated in Quebec are not new, considering the fact that they existed in this country 265 years ago and Mercier was only following an old precedent when in 1890 he passed a law giving 100 acres to every father of 12 children. An ordinance of the King dated the 3rd of April, 1669, ordered that the Intendant in New France pay a grant out of the public funds of 300 livres to every father of 10 children and 400 livres to every father of 12 children, not including the children who became members of the clergy or of religious institutions. The ordinance also stipulated that when distribution of honours or patronage took place, preference be always given to men with a large number of children. Finally, it imposed a fine on the father who did not marry his sons at or under 20 years of age and his daughters at or under 16 years of age. A further ordinance dated 20th of October, 1670, made it compulsory for the father to report every six months why his children who had reached the age required were not married. Marriages of girls 15, 14, and even 13 years of age and boys 18 and 19 were not uncommon. In the year 1670 the King spent 6,000 livres in grants to large families and in wedding gifts.

The above regulations, grants, bonuses, etc., showed results and the marriages increased from 75 in 1667 to 125 in 1669, to 122 in 1670 and 109 in 1671, but dropped to 68 in 1672 as there was no immigration during that year.

Although immigration was small, emigration was kept to a minimum. In a letter dated November 2, 1671, Talon suggested to Colbert that only those who had families in Canada, or who had real estate, be allowed to leave the country, provided they did not sell their property before leaving, and that they not be allowed to sell without approval by the Intendant. Those who were only "engagés" had, before leaving the country, to reimburse the Government for

the expenditure incurred when they were brought out. The purpose of this order was to prevent any one coming to New France only temporarily. In a letter written on the 4th of July, 1672, Colbert approved the order without restrictions.

Colbert and Frontenac also thought that if the white men would marry Indian women, the families would increase rapidly, but this scheme failed entirely, even when the sum of 150 livres was offered as a dowry to every Indian woman who would marry a white man. During the period 1608 to 1677 there were only three marriages between French and Indians.

Every encouragement was given the new settlers; some were given 100 francs, together with provisions, clothing and agricultural implements, or paid during two years while they cleared the land. The land was divided in long narrow strips two arpents wide, the purpose of this being to encourage settlements by creating community life and also to enable the settlers to assemble at a moment's notice for defence against the Indians.

The King also gave a very substantial grant to every army officer and soldier who settled on the land. As the difficulty was to find him a wife, girls for that purpose were brought from France. During the period 1665 to 1673 it is estimated that a few hundreds were brought out to Canada. Many of these girls, "Les filles du Roi", as they were called, were the daughters of army officers killed in the wars; they had been raised and educated by the nuns and consequently were cultured women. Others were recruited in various districts by the parish priests. These future mothers of Canada were carefully chosen, of good morals, and the very few doubtful cases that slipped through were immediately returned. On their way to Canada they were accompanied by respectable old ladies, and on their arrival they were placed under the care of nuns who instructed them and also helped them in the choice of a husband.

The settlers were, moreover, carefully selected before they were accepted as passengers on the ships. During Talon's time not only had they to be morally good, but they had to be healthy, rugged, good looking, able to bear the Canadian climate and between the ages of 16 and 40. Boucher, in "L'Histoire Vêritable de la Nouvelle France", tells that every new arrival, if accused of bad conduct or anything which was not according to good morals, was immediately sent back.

#### FAMILY LIFE

The family life of the early days was exemplary and, according to the "Relations des Jêsuites", was edifying and could be likened to the community of the Christians of the early days. The mother with her numerous children divided her days between the care of her progeny and the household duties. With her kindly face, always smiling, vigilant and affectionate, she was the guiding hand, the life and soul of the happy home. Despite her diversified, endless duties—which were legion—she unfailingly found time to "tuck away" tenderly her children for the night, breathing over them her maternal benediction; her spoken good-night being invariably the pious recommendation so

familiar in all French-Canadian homes, "Donne ton coeur au Bon Dieu, mon enfant."

The father was a strong, straight man, throwing himself whole-heartedly into the performance and accomplishment of his duties. He was constantly on guard against the marauding, murderous Indians while cultivating the land, and was often called to serve in the wars. These things, together with the task of rearing, protecting and providing for his large family, completely filled his life.

A most brotherly feeling existed between the neighbours, every settlement resembling one large family. They were always ready to help each other, and the farms of the colonists who were absent for long periods at the war or held prisoners by the Indians or disabled through accident, illness, etc., were cared for by some of the others. It was a very rugged but wholesome life. The colonist, with his natural gaiety and bravery carried almost to bravado, was happy in spite of the hardship and many of them lived to a grand old age. The first centenarian mentioned in the register was buried in November, 1719.

For a long period, the settlers had to carry a gun while tilling the soil. An ordinance dated the 14th of November, 1654, ordered that every one going to work or elsewhere had to carry a gun with enough powder and lead for six shots, and any one refusing to comply with this order was liable to a penalty. Those who did not have ammunition were told where they could make a fair exchange of wheat and peas for powder and lead.

Morals were at a high standard. Illegitimate children were practically unknown, as we are told that between 1621 and 1690 out of 11,773 births only two illegitimate births were known. Births were numerous; families were large but unfortunately they were sometimes visited by terrible epidemics which did destructive work and were responsible for a large number of deaths, as, for instance, smallpox in 1639, 1703, 1733, 1765 and 1784; typhus in 1665 and 1666; whooping cough, measles and scarlet fever in 1715 and 1730; and all these in the 17th and 18th century, not to mention the epidemics of smallpox and cholera of the 19th century.

Wedding celebrations date a long way back in the history of Canada, but musical instruments were not plentiful in the early days, although it is stated that on the 21st of November, 1645, at the wedding of Jean Dubuisson to Elizabeth Couillard, granddaughter of the first colonist, there were two violins to provide the music, it being the first time violins were noted at weddings. The first regular ball in the history of the social life of Canada was given in 1667 at Sieur Chartier.

#### EARLY CENSUSES OF POPULATION

At the first census taken in Canada in 1666 (the first census of modern times) the population was 3,215. Of that population, 491 were married women of whom 8 were under 16 years of age and 45 were between 16 and 20 years of age; or, in other words, nearly 11 per cent of the married women were under 21 years of age. The children 10 years of age and under accounted for

over 1,000, nearly one-third of all the people. The population was increasing rapidly and at the census of 1673 it had reached 6,705, or double what it was seven years before. Of the increase of 3,490 during that period, there were 2,031 births and 462 deaths; that is, the natural increase contributed 1,569 or 45 per cent.

## CENSUS OF CANADA, 1666\*

Familles des Habitans	Âges	Qualités et Mestiers
Pierre Duchesne Catherine Rivet	29 20	Habittant Sa femme
Jean Pelletier Anne Langlois Noel Pelletier Anne Pelletier Rene Pelletier Jean Pelletier Une fille non baptisée Guillaume Le Mieux	35 20 11 10 8 3 8 jours 17	Habittant Sa femme Fils Fille Fils Fils Travaillant au mois
Jean Tousser Jeanne de Rissecourt Jean Tousser Gervais Tousser	40 21 3 2	Meunier Habittant Sa femme Fils Fils
Jean Rouyer Marie Targor Marie Anne Royer	30 45 6 mois	Habittant Sa femme Fille
Nicolas Gendron Marie Marthe Hubert Jean Francois Gendron Jacques Gendron Nicolas Gendron Thomas Gasse	32 24 7 3 13 mois 22	Cons. Habittant Sa femme Fils Fils Fils Engagé domestique

As disclosed by the schedules the families were separated by a line drawn across the page. In each section representing the family was entered first the head of the house, then the wife followed by the children, the servants coming next and finally the roomers and boarders if any, so that each household was kept by itself. It is the method now pursued by most countries in enumerating the population. Monseigneur Tanguay, in his book "A Traver les Régistres", states that the first nominal census (1666) was taken during the months of February and March as ascertained by a comparison with the Parochial Registers, the census schedules not divulging the month of the year in which the census was taken.

After the beginning of the 18th century, the increase in population came practically all from the large families. Households of 14 and 15 children were common and one, Jean Poitras, had 27 children. Montcalm noted in his Journal that "a soldier of the Regiment of Carignan had 220 descendants settled in four parishes."

\*Extract from original.

The total number of French immigrants during the French regime has been estimated by various authors at from 8,000 to 10,000, and if we consider the thousands and thousands of persons killed during the wars, by the Indians, by accidents of all kinds, and that in 1760 the population was about 65,000, we marvel at the vitality of the first settlers. In 1666 there were in New France 538 households and at the cession of Canada to the British the number had reached 11,210. The census of 1931 gave 538,245 households in Quebec and 2,266,724 for the whole of Canada.

### *Familial Censuses*

Prior to the first census in 1666 we have no figures showing the number of children per family (that is, the number of children living at home), but in the first census the families were separated by a line drawn across the page. In each section representing the family, the head of the house was entered, then the wife, followed by the children, the servants, and, finally, the boarders and roomers, if any. Each entry was classified as to age, conjugal condition and occupation, so that it is easy to establish by age-groups the average number of children per family. The figures quoted represent the Province of Quebec only, as it is the only province completed for the 1931 family compilation.

In 1666 the number of children under 15 years of age averaged 2.27 per family, but 13 years later, in 1681, the number had increased to 2.97, the consequence of the large number of marriages in 1669, 1670 and 1671. The highest average number of children under 15 years of age per family occurred in 1707 when it was 3.03, after which it kept decreasing gradually with occasionally a slight increase, but to fall back again below the previous average until it reached 2.53 in 1739. For the period 1739 to 1851 we have only summary tables of the censuses and the age-groups do not lend themselves to comparison. At the expiration of this 112 years with abnormal changes in the complexion of the population, the census of 1851 gave an average of 2.78 children under 15 years of age per family, decreasing from census to census with the exception of 1891, when it showed an increase of 0.02, and the censuses of 1901 and 1911 when each gave the same average of 2.07, dropping to 2.04 in 1921 and to 1.90 in 1931.

All the family figures quoted so far referred to the census family, which means a group of persons living together in the same dwelling house. The figures quoted hereafter refer to what we may call the private family, that is, the father, the mother and children.

The census of 1921 was the first one to publish tables giving the number of private families reporting children, also tables segregating the families reporting no children, one child, two children, etc.

Comparing the 1931 census with 1921 for the Province of Quebec (the only one completed), we find that for the families with both father and mother living, the average number of children (all ages) living at home shows an increase from 3.67 to 3.72. This increase was due to the larger number 15 years of age and over living at home, while the number under 15 years of age

decreased. The number of children per family for all families reporting children dropped from 3.58 in 1921 to 3.49 in 1931, owing to the large increase in the families having a widow or a widower as head and to the large decrease in the number of children in these families.

If we segregate the children by age groups and compare 1931 with 1921, using only the families with both parents living and reporting children living at home, we get the following: Children under 7 years of age averaged 1.30 per family in 1931 against 1.32 in 1921; children 7 to 14 averaged 1.27 in 1931 as against 1.28 in 1921; children under 15 years averaged 2.57 in 1931 and 2.62 in 1921; children 15 years of age and over averaged 1.14 in 1931 against 1.05 in 1921. The increase in the older age group living at home is probably due to the number returning home on account of no work, and to the larger number staying at home because of no prospect for work elsewhere, also probably because of later marriages or non-marriage on the part of the young adults of the family.

Comparing the results of the 1931 census with 1921, it is very interesting to note that the proportional number of families reporting no children, one child and two children, together with the families reporting 10 children or more, show an increase, while the families reporting from 3 to 9 children show a decrease. It should be remembered in this connection that the decrease in the families of 3 to 9 children could cause an increase in those with 2 or less, merely by a transfer of class, so that the increase in 1 and 2 children does not necessarily mean greater fertility in the recent marriages.

TABLE I

PERCENTAGE OF FAMILIES REPORTING THE FOLLOWING NUMBER OF CHILDREN LIVING AT HOME

Families reporting	1931	1921	Families reporting	1931	1921
Total.....	100.00	100.00	9 children.....	1.72	1.86
No children.....	26.17	25.51	10 ".....	1.04	0.84
1 child.....	17.69	17.16	11 ".....	0.59	0.44
2 children.....	14.64	14.09	12 ".....	0.29	0.19
3 ".....	11.26	11.61	13 ".....	0.12	0.07
4 ".....	8.62	9.24	14 ".....	0.05	0.03
5 ".....	6.57	7.18	15 ".....	0.02	0.01
6 ".....	4.97	5.28	16 ".....	0.01	....
7 ".....	3.67	3.87	17 ".....	....	....
8 ".....	2.57	2.62	18 ".....	....	....

The private families during the decennial period 1921 to 1931 increased from 473,868 to 579,252, an increase of 22.24 per cent subdivided as follows: families of one person increased from 28,971 to 42,018 or 43.03 per cent; total families of two or more persons from 444,897 to 537,234 or 20.75 per cent; families of two or more persons reporting children from 353,000 to 435,567 or 23.39 per cent, and families of two or more persons not reporting children from 91,891 to 101,667 or 10.63 per cent. To put it another way, the families of one person represented 6.11 per cent of all families in 1921 and 7.26 per



cent in 1931, and of the families of two or more persons 20.65 per cent reported no children in 1921 and only 18.92 per cent in 1931.

#### CULTURE AND CHARACTERISTICS OF THE YOUNG CANADIAN FAMILY

The immigrants during the French regime, as a rule, came from good stock; they nearly all read and wrote, as shown by the early registers of births, deaths and marriages. But their descendants were not educated to the same degree due to the difficulty of establishing schools over a large area for a scattered population and to the scarcity of teachers in those days. The first schools were opened by the Recollet Fathers in 1616 and the first college in 1635.

In 1667 young Indians were, at the King's request, admitted to the schools, but this proved a failure and was detrimental to the education of the French boys. The natural inclination of the boys was for adventure, and the stirring stories of the "coureurs des bois" made it hard to make them take interest in their studies. When the young Indians were admitted to the schools, the contact of such wild companions who thought of nothing else but roaming the woods, hunting the beaver or canoeing over unknown lakes and rivers, fired the French boys with such intense longing for the outdoor life that application for study was lacking. In addition, Canada was at war with the Indians, or with rival colonies, and it is no wonder the young were restless and not very eager to settle down to study.

In 1667 l'Abbé de la Tour wrote: "Canadian children, as a rule, have shown great brightness, memory and talent, learn quickly, but, longing for adventure, very fond of freedom, with a great desire and capacity for physical exercise, they lack the systematic application necessary to acquire learning. Satisfied with a certain amount of knowledge to help them in their daily avocations, none of them became highly educated." Although they were not adding much to book learning, it had a compensating factor in that they were increasing their physical strength and their mental alertness, and were developing into a rugged hardy race which was very necessary for the country at the time.

There was also another compensating factor: the women in the early days of the colony were highly educated. The Ursulines and Hospital nuns arrived in 1639 and a convent was opened the same year, and it became the ambition and pride of every father to send his daughters to school (convents) as long as possible. During those early days, in so far as the general public was concerned, as a rule the women carried on the correspondence for the male members of the family, kept the account books, etc., and, as explained before, between the years 1665 to 1673 from 800 to 1,000 girls were brought out, who married within six months of their arrival and who had been educated in the convents of France before coming to this New World.

#### SCHOOL ATTENDANCE, ILLITERACY, AND SIZE OF FAMILY

It was indeed fortunate that the mothers of the early Canadian-born population were educated, considering the fact that the mother forms the language of the children, and also has a greater influence on the school atten-

dance and literacy of the children than the father, as shown conclusively in the censuses of 1921 and 1931. The last two censuses compiled tables showing the number of children, the school attendance and the illiteracy of the children cross-classified according to the literacy of the parents. It is remarkable how the school attendance and the illiteracy of the children vary with the literacy of the parents but more pronounced as with that of the mother. In 1921 and 1931 the school attendance and illiteracy of the children 7 to 14 years of age for the Province of Quebec, cross-classified with the illiteracy of the parents, was as follows. In families having both parents literate 91.42 per cent of the children attended school and 2.33 per cent were illiterate. With father illiterate and mother literate 81.09 per cent attended school and 7.01 were illiterate. With father literate and mother illiterate 80.09 per cent attended school and 10.41 were illiterate, and with both parents illiterate only 70.39 attended school and 20.29 per cent were illiterate.

TABLE II  
LITERACY OF PARENTS, PROVINCE OF QUEBEC, 1921

Literacy	Number of families	Children 7 to 14 years				
		Number	At School		Illiterate	
			No.	P.C.	No.	P.C.
All Classes.....	312,993	400,459	359,792	89.84	13,421	3.55
Both literate.....	276,431	350,458	320,400	91.42	8,232	2.35
Mother only illiterate.....	6,275	8,047	6,510	80.90	838	10.41
Father only illiterate.....	21,391	31,327	25,402	81.09	2,195	7.01
Both illiterate.....	8,896	10,627	7,480	70.39	2,156	20.29

TABLE III  
LITERACY OF PARENTS, PROVINCE OF QUEBEC, 1931

Literacy	Number of families	Children 7 to 14 years				
		Number	At School		Illiterate	
			No.	P.C.	No.	P.C.
All Classes.....	364,361	463,682	422,181	91.05	16,621	3.58
Both literate.....	330,573	418,550	385,278	92.05	11,591	2.77
Mother only illiterate.....	5,832	7,116	5,908	83.02	813	11.42
Father only illiterate.....	20,799	30,011	25,043	83.45	2,549	8.49
Both illiterate.....	7,157	8,005	5,952	74.35	1,668	20.84

In 1926 Mr. M. C. MacLean of the Dominion Bureau of Statistics published a complete analysis on this question of school attendance and illiteracy.

Other remarkable data, when cross-classified with the literacy of parents, are the average number of children 15 years of age and over per family living at home. The following table shows that the more illiterate the parents are, the larger is the number of older children living at home. The average number of

children 15 years of age and over in families having both parents literate was 1.01, with mother only literate 1.19, with father only literate 1.39, and with both parents illiterate 1.45.

TABLE IV

FAMILIES WITH BOTH PARENTS LIVING REPORTING CHILDREN, 1921 AND 1931

Literacy of Parents	1921			1931		
	Number of Families	Children 15 years of age and over at home		Number of Families	Children 15 years of age and over at home	
		Total	No. per family		Total	No. per family
All Classes.....	312,993	329,449	1.05	364,361	416,132	1.14
Both parents literate.....	276,431	279,370	1.01	330,573	363,313	1.10
Mother only literate.....	6,275	7,444	1.19	5,832	8,350	1.43
Father only literate.....	21,391	29,748	1.39	20,799	33,097	1.59
Both illiterate.....	8,896	12,886	1.45	7,157	11,372	1.59

The number of children 15 years of age and over living at home is largest with both parents illiterate and lowest with both parents literate, and in view of the fact that the children of literate parents are better educated than the children of illiterate parents, the probabilities are that educated children have larger opportunity and a wider field to find employment, while the odd-job young men are as well off in one place as another and consequently stay at home longer.

Another feature of the 1931 census is that we have compiled for the first time the number of children living at home according to the occupational status of the father, which shows the following. The average number of children 15 years of age and over living in the "employer" family is 1.84, in the families where the head is classed as "own account" the number is 0.52, and in the families of "wage earner" heads the average is 0.75, showing the employer with the largest average number of older children living at home.

## CONCLUSION

We have only touched on the family as it is to-day because it is impossible to make a complete study of this subject in a short paper. Enough, however, has been shown to make us justly proud of our Canadian family, and although most references were to the Quebec family it is applicable to all. This can not be better exemplified than by quoting from "The Clash" by W. H. Moore. Speaking of the proverbial hospitality of the Canadian family, he said:

"The stranger—English or French—was made welcome in the home; and the guest of to-day was the host of to-morrow. The fires were kept burning under the kettle; pea soup and soup-aux-pois were one and the same thing when served in the rough-hewn log houses. There was a difference between English and French, it is true; but it was that between p-e-a-s and p-o-i-s."

# Morbidity and Mortality in Industrial Establishments\*

R. VANCE WARD, M.D.

*Department of Public Health and Preventive Medicine, McGill University*

THE success of public health activities has always demanded carefully recorded statistics of mortality, both as a measure of the efficacy of work already undertaken and as an index to the needs of the future. Since public health activities have extended their scope to include not only the prevention of death, but also the prevention of lost time from sickness, a demand has arisen for accurate statistics of the amount and of the various causes of sickness and absenteeism.

It is at once apparent that the keeping of such records is not as simple a matter as is the recording of deaths in a community. The border line between life and death is an exceedingly sharp and well-defined one; that between health and sickness is one both ill-defined and variable. The occurrence of a death in a community is an event of some importance, the reporting of which to the proper authorities can easily be made a legal obligation. On the other hand, the least serious sicknesses cause the greatest aggregate amount of lost time, and no satisfactory plan could be evolved for their reporting on a community basis.

To those of us interested in industrial hygiene, the industrial health service has seemed the only practicable agency for the collection and analysis of such data. The closely related industrial sick benefit association was the pioneer of such work, but, as we have had occasion to point out, the records kept by these organizations are almost invariably incomplete. In the first place, they impose nearly always a waiting period of from three to seven days before benefits commence, and the aggregate of these short absences, not recorded at all, is a very large part of the total lost time from sickness. Other associations again pay no benefits for diseases "not common to the two sexes", and some exclude claims for "arthritis" or for pain in the back.

With the establishment, in 1928, of several industrial health services, under the supervision of the Department of Industrial Hygiene of McGill University, we determined to keep accurate records of every day or half day lost on account of sickness at the plants served, a determination which we have carried out to the present time.

The form illustrated in Figure I is the basis of the compilation. At all the plants there is a nurse on duty all day and a physician in attendance part of the day. The regulations require that before an employee receives a pass to go home on account of sickness, he must first report to the factory hospital; there a record is made of the nature of his illness. Should his illness begin during his hours at home, he is required to report to the factory hospital as soon as he returns. Each morning foremen telephone to the nurse the names

\*Presented before the Vital Statistics Section at the Twenty-Third Annual Meeting of the Canadian Public Health Association, Montreal, June, 1934.

of all absentees, and the nurse visits the homes of all employees absent three days or longer. At the factory hospital the record of the absentees is kept for

COMPANY		MONTHLY REPORT OF ABSENTEES																										DATE		April, 1930.	
NO.	NAME	DEPT.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL	DIAGNOSIS	
27	R	Draught	x	x	x	x																							5	RHEUMATIC FEVER	
28	D	Bottling	x	x	x	x	x	x	x	x																			10	INJURY TO FINGER	
	F	Driver																			x	x	x	x	x				6	ARTERITIS	
6	H	Brewing																						x	x	x	x	x	7	PAIN AND SWELLING IN KNEE	
64	G	Trans.																							x	x	x		3	COLD	
																													81		

Figure I.—Form used for Monthly Report of Absentees.

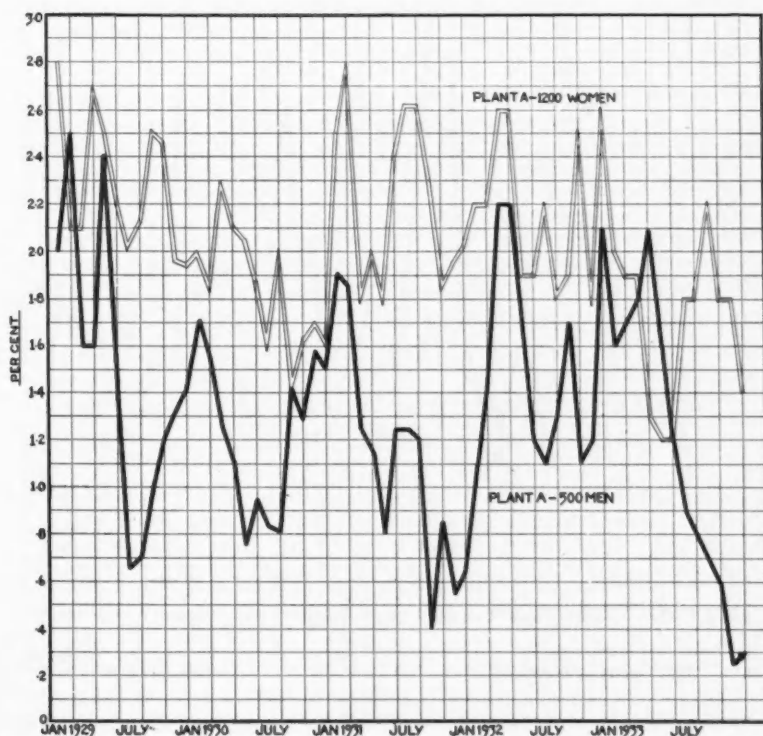


Figure II.—Percentage of working time lost on account of sickness. Plant A. Five years, 1929-1933.

each month on the sheets shown in Figure I. For each day of absence a check is made, and when the employee finally returns, the diagnosis is inscribed in the last column. At the end of the month it is a simple matter, given the number

of man-days worked, to compute the percentages of lost time from sickness and to tabulate the days lost from various causes, according to the International Classification of Causes of Death. Before such classification is made, a considerable amount of editing is done by the physician in charge of the plant to eliminate unsatisfactory diagnoses in the light of his knowledge of the case and of further developments of the case itself. Thus, the case originally inscribed "indigestion" may become "carcinoma of the stomach" before it is included in

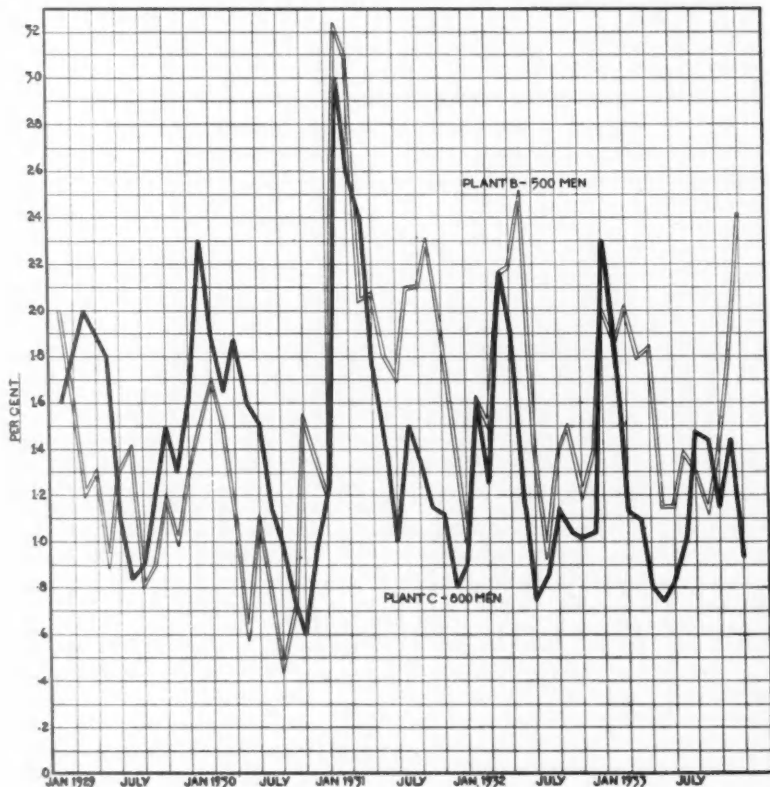


Figure III.—Percentage of working time lost on account of sickness. Plants B and C. Five years, 1929-1933.

our final records, and the occasional "cold" may be finally inscribed "tuberculosis".

Figures II and III present four curves, showing the trend of lost time monthly among men and women: Figure II among 1,200 women and 500 men employed at a plant A; Figure III, 500 men employed at a plant B and 800 men working in four plants of one company, C.

The shape of these curves is quite characteristic; in nearly every case there



is a marked peak in the period January to March, and a depression in the summer months. The curves for men fall well below the two per cent line; the curve for women tends to be well above it.

An important fact is that the economic depression seems to have exerted little or no unfavourable influence on the amount of lost time from sickness, as recorded by us.

### *Occupational Mortality*

It is at once apparent that, owing to the comparatively small number of deaths in any one plant, records kept by the health services of individual concerns are of little or no value in the study of occupational mortality. Dependence again must be placed on the mortality tabulated for the population as a whole.

It is clear that, if we are able to compare the death rates from any one disease occurring in different occupational groups, we have information of great value to the industrial hygienist. Now the mortality returns both to the government and to the insurance companies state the deceased person's occupation at the time of his death. If we know accurately the number of living persons in the occupational group and are certain that the deceased person has been a member of the certified group throughout the greater part of his life, it is a simple matter to compute death rates from any disease in any given occupation, and to compare them.

Such a happy state of affairs does pertain, to a large extent, in the British Isles. Death returns to the civil authorities state the occupation of the deceased, usually quite accurately. From the decennial census, the number of living persons in any occupational group is known, and finally, there is very little shifting of occupations among the working population. These differential occupational mortality rates are carefully computed and published every ten years in the Registrar-General's Decennial Supplement, Part II, entitled Occupational Mortality, Fertility and Infant Mortality. The publishers of this remarkable book go further and compute a so-called C.M.F., or "Comparative Mortality Figure". This may be defined as a standardized mortality rate at ages 20-65 jointly, derived from a sample of the occupied and retired civilian population at these ages in 1921, having the age distribution of this population and of such a size as to yield at the mortality rates recorded for this population, in 1921-23, exactly one thousand deaths. Each occupational C.M.F. is greater or less than this occupational average in proportion as it is more or less than 1,000. The occupational average is usually expressed as 100, and the C.M.F. of any given occupation by a proportional figure.

As examples of the useful information which it is possible to abstract from this publication several tables presenting pertinent data are given herewith.

Table I shows the standardized mortality for all causes of death of males 20-65 engaged in certain occupations. The extremely favourable rates enjoyed by farmers and clergymen and the very unfavourable rates pertaining among metal and cutlery grinders and tin and copper miners are especially worthy of note.

TABLE I

STANDARDIZED MORTALITY FOR ALL CAUSES OF DEATH OF MALES  
AGED 20-65 ENGAGED IN CERTAIN OCCUPATIONS

(All occupied and retired males = 1000)

Occupation	Rate
Clergymen	561
Farmers	674
Paper mill workers	761
Coal miners	938
Physicians	1021
Potters	1642
File cutters	1851
Metal grinders	1977
Grinders (cutlery)	3295
Tin and copper miners	4335

Table II (death rates per 100,000 at ages 45-55 from tuberculosis in various occupations) gives us the key to the cause of most of this excess mortality among the groups previously mentioned.

TABLE II

MORTALITY RATES PER 100,000 AT AGES 45-55 FROM  
TUBERCULOSIS IN VARIOUS OCCUPATIONS

Occupation	Rate
Farmers	62
All occupied and retired males	166
File cutters	209
Barmen	467
Potters	616
Masons	617
Metal grinders	1149
Tin and copper miners	1744
Cutlery grinders	2206
Tin and copper miners (underground)	2533

In Table III it is interesting to note that, notwithstanding the claims of professional moralists that those who sell alcoholic beverages to others do not partake themselves, the mortality rate from cirrhosis of the liver at ages 55-65 among inn-keepers is over eight times that of all occupied and retired males.

TABLE III

MORTALITY RATE PER 100,000 AT AGES 55-65 FROM CIRRHOSIS OF THE  
LIVER IN VARIOUS OCCUPATIONS

Occupation	Rate
All occupied and retired males	31
Commercial travellers	73
Cellarmen	91
Potters	93
Solicitors	92
Authors and journalists	94
Dentists	150
Actors	157
Brewers	246
Inn-keepers	266

In addition to a study of death rates by occupations, the Registrar-General's

Department has divided the working population into five classes, according to their economic status: Class I, the wealthy landed class; Class II, the so-called middle-class, consisting of professional people, small business men and white-collar workers; Class III, skilled labour; Class IV, semi-skilled labour, and Class V, unskilled labour.

Figures IV and V show the mortality from various diseases in each social class, expressed as a percentage of that obtaining from the same cause among all occupied and retired males. For each cause, five vertical lines are shown, representing from left to right the experience of Classes I to V. The incidence of mortality from diabetes and appendicitis in the two groups is especially interesting.

In the United States and Canada no such comprehensive compilation has ever been attempted; the principal reason has been that workmen habitually change their occupation so frequently on this continent that there have been serious doubts as to the value of the figures.

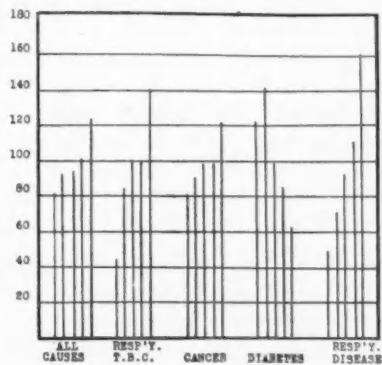


Figure IV.—Social distribution of mortality from various causes. Mortality of each social class per cent of that of all Occupied and Retired Males.

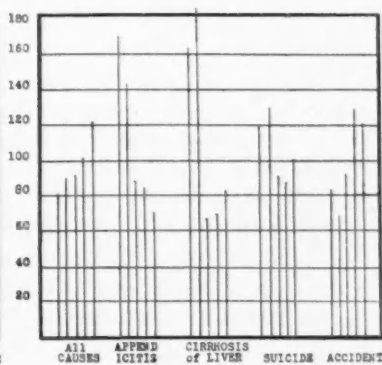


Figure V.—Social distribution of mortality from various causes. Mortality of each social class per cent of that of all Occupied and Retired Males.

The Metropolitan Life Insurance Company undertook a study (1) of this shifting of occupations among wage earners by the simple method of comparing two records of occupation as kept for 4,198 industrial policy-holders—the one at the time of the issuance of the policy and the other at the time of the death of the policy-holder. They tabulated these results according to original occupations. While a considerable percentage of those in certain occupations remained at the same work until death (tailors 75 per cent; barbers 69 per cent; textile mill operatives 57 per cent), only 35 per cent of the iron-foundry workers, 38 per cent of the longshoremen and stevedores, and 41 per cent of the iron and steel mill workers did so.

It is to the same agency that we owe the most complete analysis of causes

of death, by occupation, that has been attempted on this continent. The first monograph published (2) analysed the causes of death of 94,269 white male policy-holders, 15 years of age and older, who died during the three years 1911-13. The second (3) makes a similar analysis of 112,364 deaths during the years 1922, 1923 and 1924.

In this study, since the total number of policy-holders in each occupation is unknown, the method of proportionate mortality had to be used; that is, to find out, for each occupation, the part that each cause of death has played in the total mortality of that occupation, taking into account the factor of age. The first step was to obtain the general percentage distribution of the principal causes of death among the group as a whole, by ten-year age periods, and then to present similar percentages for each occupation studied, again by age groups. The ratio of these percentages they called the "relative index of mortality" of the occupation. In addition, standardized percentages for principal causes of death and for each occupation during the main working period of life (15-64) were worked out. The ratio between the standardized percentage for a given cause in a selected occupation, and the corresponding percentage for all occupied males was called the "standardized relative index".

It is obvious that this method has many imperfections and that it is, at best, only a helpful device for picking out the relatively most important causes of death in different occupations. For instance, among coal-miners, (all occupied males 100) we find the following high standardized relative indices, namely, influenza 188, pneumonia 150, other respiratory diseases 238, accidents 228. On the other hand, the S.R.I. for tuberculosis is low, namely, 48.

I have endeavoured to review the principal methods of statistical analysis of morbidity and mortality used by industrial hygienists. Although necessarily imperfect in this country, the application of such methods leads to conclusions of undoubted value, both to the public health worker particularly interested in the industrial employee and to those working in the broader fields of preventive medicine.

#### REFERENCES

- (1) Shifting of Occupations among Industrial Insurance Policy-holders. Louis I. Dublin and Robert J. Vane, Jr. *Monthly Labor Review* (April, 1924) of the Bureau of Labor Statistics, United States Department of Labor.
  - (2) Causes of Death by Occupation. Louis I. Dublin. *Bulletin of the United States Bureau of Labor Statistics*, No. 207.
  - (3) Causes of Death by Occupation. Louis I. Dublin and Robert J. Vane, Jr., *Bulletin of the United States Bureau of Labor Statistics*, No. 507.
-

# Public Health in Upper Canada

K. F. BRANDON, M.D., D.P.H.

*Department of Epidemiology and Biometrics,  
School of Hygiene, University of Toronto*

IN 1791 Upper and Lower Canada were created, Upper Canada consisting of all the territory lying to the west and south of what are now the boundaries of Quebec. In Upper Canada the settlements around the garrisons of Kingston and Newark (Niagara) were the largest centres of population, with few inhabitants elsewhere.

By 1832 immigration by way of the St. Lawrence had reached large proportions. The long ocean passage and the wretched condition of many of the immigrants resulted in the introduction of typhus fever, cholera and other diseases into the colony. However, no legislation relating to public health was enacted in Upper Canada in the period from 1791 to 1832.

In Lower Canada a Quarantine Act was passed in 1795 to oblige vessels coming from infected places with plague or any pestilential fever on board to perform quarantine. Ships were obliged by this Act to perform quarantine when notice was given by proclamation.

On the 22nd March, 1823, an Act was passed to provide funds to enforce this Act and on the 25th February, 1832, an Act was passed to establish Boards of Health and to enforce an effectual system of quarantine.

In 1866, the Quarantine Regulations were extended to include the detection of lunatic, idiotic, deaf and dumb, blind and infirm persons on board vessels who were liable to become a public charge. These regulations were embodied in an Act respecting Immigration, which was passed in the year 1869.

The first isolation hospital was erected at Point Levis under authority of a law passed in 1830, which also provided for the appointment of a health officer for the port of Quebec to inspect and disinfect ships.

The prevention of the introduction of infectious diseases in Upper Canada depended upon the efficiency of the officials of the Quarantine Station at Grosse Isle and the health officer of the port of Quebec.

## *Cholera*

The history of public health in Upper Canada is chiefly the history of cholera. This contagion reached Canada by way of the St. Lawrence in the year 1832 and was most fatal to the young colony. At that time the disease was a mysterious one to the profession and many supposed that winds of some peculiar character spread it from country to country; thus it had spread westward from India in 1827, to Russia in 1829, and later to Britain. The next ravages of its westward march seemed destined for America.

This fear was soon realized. The first cases of cholera arrived in the St. Lawrence on April 28, 1832. They were landed at Grosse Isle from the ship *Constantina*, which had left Limerick with 170 immigrants, of whom 29 had died on the voyage. Several other infected ships arrived and by June an

epidemic had begun. An Act dated February 25, 1832, established Grosse Isle as a quarantine station. Here a few wooden sheds had been erected hurriedly and converted into hospitals for the sick but there were neither sanitary premises nor medical attendance. Under these circumstances the death toll on the island was heavy. No effort was made to quarantine contacts for the incubation period of the disease, as is done to-day. All who seemed well were allowed to continue their journey up the St. Lawrence. Disinfection was unknown. There was constant intercourse between sailing and steam vessels westward to Montreal. The disease ascended the Richelieu and thence reached Lake Champlain and the Hudson.

The epidemic lasted about 4 months, disappearing by the middle of October. In Quebec there occurred during that fatal summer 2,800 deaths from cholera alone. In Montreal 800 deaths occurred in the first fortnight, and by September 1,843 had been killed by the disease.

In Upper Canada the epidemic of 1832 appeared in Prescott on June 14th. The Lieutenant-Governor and the Government manifested a very intelligent appreciation of the public danger and an Order-in-Council provided funds and organization to do everything that the knowledge of the time made possible for the limitation of the disease. Thus the Lieutenant-Governor placed at the disposal of the magistrate of each district the sum of £500 "to provide necessary hospitals and medical attendance and for making the arrangements that the medical board of each district, to be formed at the request of the Board of Health, may suggest."

#### THE PUBLIC HEALTH ACT OF 1833

That the province was alive to the danger of the return of cholera is indicated by an Act passed by the legislature, February 13, 1833, entitled "An Act to establish Boards of Health, and to guard against the introduction of Malignant, Contagious and Infectious Disease in This Province, and for the Formation of Local Boards". Under this Act a local board was formed in York. The Act of 1833 stated that "It shall and may be lawful for the Governor, Lieutenant-Governor or person administering the government to appoint three or more persons in each and every town in this province and in such other places as may be deemed necessary, to act as health officers within their respective limits". Other clauses in the Act gave authority to health officers to enter premises and order them to be cleared; also for the formulating of rules by the Governor-in-Council concerning the entry and departure of vessels and the landing of passengers. A penalty of 20s. was provided for the violation of any rules or regulations of the Board or for obstructing its officers.

The life of this Act was limited to one year and from then to the end of the next session of the Provincial Parliament.

#### *Typhus Fever*

Typhus fever was epidemic in Canada for the first time in 1659, when it was known as ship fever. It was brought to Quebec in that year by a French vessel called the "Saint André". The lack of appreciation of contagion soon



allowed the disease to spread through the colony. Ship fevers were being constantly imported and under the French regime were epidemic in 1740, 1743, 1745, 1746, 1750, 1756, 1757 and 1759.

Outstanding as "the year of the typhus epidemic" was 1847. In that year, with no standards or restrictions, the amount of immigration was greatly increased. Overcrowding of the passengers and their extreme poverty, coupled with filth and insufficient ventilation of the vessels, were determining factors of the epidemic.

In the report of the committee of the Honourable the Executive Council on Matters of State, 7th of December, 1847, the description of the epidemic of typhus among emigrants to Canada is given. It reveals that no fewer than twenty-six boards of health had been established in Upper Canada, from two of which alone, the cities of Kingston and Toronto, the number of deaths amounted to 1,965.

#### *Formation of Local Boards of Health*

In 1849 another epidemic of cholera appeared. The disease is said to have entered Canada by way of Kingston in 1849, where it made its appearance at the end of May. When the first two cases occurred in Montreal in June, 1849, the newspapers issued warnings which were heeded in Toronto, as illustrated by the following report from the *Globe* of June 21st:

"There was a special meeting of the city fathers to take into consideration a subject of grave importance to the citizens of Toronto at the present time, the appointment of a Board of Health."

Under authority of the Act of 1833 other centres formed boards of health which functioned fairly well and passed by-laws for the control of cholera. They were tremendously handicapped by the dearth of knowledge of the cause of disease at that time and the doctrine taught by many was that cholera was not contagious. By September 11th there had been 745 cases and 449 deaths in Toronto; in Quebec there were 1,047 deaths during the epidemic.

#### THE PUBLIC HEALTH ACT OF 1849

During this epidemic the lack of any central authority was keenly felt. Accordingly in April, 1849, the Parliament of the United Canadas (Upper and Lower Canada had been reunited by the British House of Commons that same year) passed an act establishing a Central Board of Health. It provided that whenever the province or any part thereof was seriously threatened with an outbreak of any contagious disease, the Governor might by proclamation declare the Act to be in force in the whole province, or in any part thereof. It was an amendment to the Act passed in the fifth year of William IV. Under this Act the Governor could, by commission, appoint a Central Board of Health. The Act empowered the chief municipal officer of every place affected by such proclamation to take steps for constituting a "Local Board of Health" of not less than three persons. Failing this, the Governor was to appoint the Local Board of Health on the petition of ten or more ratepayers stating that the

council had refused to make such an appointment. Another section provided that any three or more members of the Central Board could issue such regulations as they deemed proper to prevent or mitigate epidemic or contagious disease and that the said Board could authorize and require the Local Board to enforce and superintend the execution of the said regulations for dispensing medicines and for affording aid to the affected and to those threatened. Local Boards were further empowered to remove the sick from any unhealthy dwelling to tents, etc. Health officers were empowered to enter premises at all reasonable times and they might call to their aid constables to enforce removals, if necessary. The expenses of the Central Board were to be met by money voted by the United Canadas' Parliament and the expenses of the Local Boards were to be defrayed by the municipality.

During the period while the proclamation was in force all municipal health regulations were to be suspended. A penalty of £5 was provided for violation of the regulations. In the autumn, however, cholera disappeared from the province.

#### CENTRAL BOARD ESTABLISHED

Cholera reappeared in 1854, and on July 2nd, under the Act of 1849, a proclamation was issued at Quebec which established a Central Board of Health and declared the Act of 1849 to be in force in the province and to continue so for the following six months.

This Central Board of Health issued sanitary and hygienic regulations which to us are quaint and interesting. In the first chapter general and personal instructions were given concerning the sanitation, cleansing and ventilation of houses and other premises. Other sections dealt with such matters as clothing, bathing, food and drink, and the care of the sick.

Many other excellent sections were in the regulations, among them, advice to Local Boards to attend especially to unsound meat, cellars, privies, cesspools, etc., stagnant pools, pig-pens, and slaughter-houses, tanneries and other trades now included in the present Act under "Offensive Trades".

Undertakers were strictly regulated and all burials were to be private and within 24 hours. No interment was to be permitted within the walls of a church or the limits of any city or town; crowding grave-yards was forbidden, and the opening of vaults having had recent interments was to be done "with the utmost caution". All ship captains had to report deaths on board.

Local Boards were requested to make *weekly reports* to the Central Board. These precautions seem to have been accepted with the co-operation of the public and to have been fairly well observed. There is no doubt that these regulations were helpful in preventing the epidemic from reaching the proportions of previous ones.

The epidemic of 1854 was practically the last outbreak of cholera in Ontario.

#### *Central Board of 1865*

It was in 1865 that cholera again appeared in Europe and apprehensions

that it might reach Canada caused the Governor then at Ottawa to appoint a Central Board of Health. This was the last order issued under the Act of 1849. On May 8, 1866, the regulations adopted by the Central Board of Health were published and were similar to those of 1849. There was immediate public health activity throughout the province. On May 11th, three days later, Dr. Tempest was appointed Medical Health Officer by the Board of Health of the city of Toronto. Before the Canadian Institute he delivered a paper on cholera expressing his belief that it was of the class of "zymotic diseases and multiplied in the system". This early mention of the zymotic character of the disease is of special interest. In Ottawa two medical health officers, Dr. Van Courtland and Dr. St. Jean, were appointed for six months at salaries of \$500.00 each. The regulations provided that all infected vessels had to stop at Grosse Isle or in the St. Charles River at Quebec and that all mail steamers were to be boarded at Father Point and inspected, and, if free from infection, to be allowed to proceed.

#### THE PUBLIC HEALTH PROVISIONS OF THE BRITISH NORTH AMERICA ACT

On July 1, 1867, confederation of the Canadian provinces was accomplished and the foundations of a national, centralized government were laid. The opportunity for nationalizing and promoting public health laws had come, but public health as a national interest was not considered. The only references to health matters are found in sections 91 and 92 of the Act. These sections are as follows:

*Section 91.* It shall be lawful for the Queen, by and with the Advice and Consent of the Senate and House of Commons, to make Laws for the Peace, Order, and good Government of Canada, in relation to all Matters not coming within the Classes of Subjects by this Act assigned exclusively to the Legislatures of the Provinces; and for greater Certainty, but not so as to restrict the Generality of the foregoing Terms of this Section, it is hereby declared that (notwithstanding anything in this Act) the exclusive Legislative Authority of the Parliament of Canada extends to all Matters coming within the Classes of Subjects next hereinafter enumerated; that is to say,—

*Sub. Sec. 6.* The census and statistics.

*Sub. Sec. 11.* Quarantine and the establishment and maintenance of Marine Hospitals.

*Section 92.* In each Province the Legislature may exclusively make laws in relation to Matters coming within the Classes of Subjects next hereinafter enumerated; that is to say,

*Sub. Sec. 7.* The establishment, maintenance, and management of Hospitals, Asylums, Charities and Eleemosynary Institutions in and for the Province, other than Marine Hospitals.

The above sections are quoted exactly and in detail because of the frequent current discussions on the relative responsibilities of the Dominion and the Provincial Governments in matters concerning the health of our people. It is obvious that the Dominion has residual powers in regard to such activities of public health as are not definitely mentioned in the British North America Act. In 1869 the Hudson Bay Territories were organized and entered Confederation, and Manitoba entered in 1870, British Columbia in 1871, Prince Edward Island in 1873, and Saskatchewan and Alberta in 1905.

# Les Inspecteurs d'Unités Sanitaires, Leurs Devoirs et Leurs Responsabilités\*

JEAN GRÉGOIRE, M.D., D.P.H.

*Inspecteur d'unités sanitaires, Québec*

L'INSPECTION des Unités sanitaires fut créée dans la province de Québec en 1931 pour établir une liaison entre le Bureau Central et les différentes Unités. Elle a donc subi l'épreuve de trois années d'expérience et le travail accompli depuis sa création a démontré non seulement son utilité, mais encore son impérieuse nécessité.

Pour comprendre l'importance de l'inspection, il n'est pas sans intérêt de rappeler ici la portée véritable de notre loi des Unités sanitaires. Bien peu de gens se rendent compte qu'on ne trouvera dans aucun pays, une mesure législative aussi avancée en matière d'hygiène publique. Aux Etats-Unis, où nous sommes allés chercher la conception de nos Unités sanitaires, les comtés possédant telle organisation, reçoivent une subvention de l'Etat, mais doivent s'occuper eux-mêmes de solutionner leurs problèmes de santé publique. Ils sont directement intéressés dans l'administration financière de leur bureau d'hygiène. Le personnel qui en fait partie ne peut être nommé sans leur consentement. S'il est responsable dans une certaine mesure à l'Etat, il faut reconnaître qu'il l'est encore davantage aux autorités locales. Les comtés ont voix au chapitre des organisations administratives, scientifiques et techniques de leur bureau de santé et le choix du médecin qui doit diriger l'Unité sanitaire est laissé à l'organisation locale dirigée par la profession médicale du comté.

C'est tout à fait différent dans la province de Québec. Les comtés organisés en Unités sanitaires versent chaque année à l'Etat un montant fixé par la loi. L'Etat, par l'intermédiaire du Service provincial d'Hygiène, assume, par le fait même, l'obligation de surveiller leurs problèmes de santé, publique, tant individuels que collectifs. Les comtés n'interviennent pas dans la nomination du personnel de leur bureau d'hygiène; ils n'ont aucun contrôle sur l'administration financière, et encore moins sur l'organisation scientifique et technique de ce même bureau. Le personnel qui en fait partie ne leur est pas responsable. Il relève directement du directeur du Service provincial d'hygiène.

Les comtés contribuent financièrement. La profession médicale que nous sommes toujours heureux de consulter ne participe pas non plus directement à l'organisation de nos Unités sanitaires. C'est, en matière de santé publique, une sorte de dictature que les comtés confèrent au Service provincial d'Hygiène lorsqu'ils demandent la formation d'une Unité sanitaire chez eux. La valeur d'un tel régime en matière d'hygiène est aujourd'hui bien établie. Il est bien

\*Presented at the Twenty-Third Annual Meeting of the Canadian Public Health Association, Montreal, June, 1934.

certain, toutefois, qu'il confie à celui qui en a la charge un travail écrasant et des responsabilités non moins lourdes. Or, de 1926, à 1933, trente-six comtés ont été organisés en Unités, avec un personnel de cent trente-cinq membres. Pendant ce même espace de temps, le bureau central n'a pas ajouté une seule unité à son personnel déjà restreint. Le nombre et la complexité des problèmes que les Unités faisaient naître devaient fatalement déborder les autorités centrales. D'autre part, les officiers médicaux, dispersés aux quatre coins de la province, sentaient le besoin d'un rapprochement plus rapide avec le bureau-chef. De toute nécessité, il fallait créer un système de communication plus efficace entre le département et les Unités sanitaires. De cette pensée est née l'inspection, telle qu'elle existe aujourd'hui. Deux médecins furent nommés à cette fonction en 1931; un an plus tard, on augmenta ce chiffre de deux unités, et maintenant nous comptons cinq inspecteurs qui consacrent tout leur temps à visiter les Unités pour maintenir entre elles et le département cette liaison si nécessaire au bon fonctionnement de notre Service. Ces inspecteurs sont tous des médecins qualifiés en hygiène publique. Tous connaissent à fond le rouage des Unités sanitaires dans ses moindres détails. S'ils sont parfois porteurs de messages importants pour le compte du département, il n'en reste pas moins vrai que ce ne sont pas des commissionnaires comme certains esprits malins seraient portés à le croire. Leur rôle n'est pas non plus celui d'un gendarme toujours à l'affût de faiblesses à livrer à la justice. Sans doute, se doivent-ils à eux-mêmes de ne pactiser avec aucune défaillance. Mais, ce n'est qu'après bien des exhortations au repentir qu'ils soumettront les mécréants endurcis aux autorités compétentes. Leur mission ressemble en tout point à celle d'un ambassadeur. Il va sans dire que pour bien l'accomplir il leur faut une certaine souplesse et une certaine affabilité qui n'excluent pas cependant la fermeté.

Le premier devoir des inspecteurs fut de se rendre compte sur les lieux, du travail accompli par les membres de chaque Unité. Celui-ci peut varier d'un comté à l'autre dans des proportions parfois formidables. Les conditions climatiques, les distances à parcourir, l'état des routes, la distribution des voies ferrées peuvent faciliter certaines activités dans tel comté et paralyser tout effort dans tel autre. Il fallait tenir compte de tous ces facteurs avant de formuler un jugement.

Leur suprême objectif, toutefois, reposait sur la manière dont chaque membre du personnel exécutait son travail. Ce ne fut pas besogne facile. On ne nous avait pas confié l'inspection pour chanter les louanges des Unités sanitaires au bénéfice du Service ou du gouvernement. Il nous fallait dire la vérité et rien que la vérité. Vous imaginez, j'en suis certain, toute la responsabilité dont nous sentions le poids. Le directeur et son assistant étaient bien prêts à écouter favorablement nos rapports, mais à une condition: ils devaient contenir des faits bien précis, être exempts de partialité et offrir des suggestions opportunes. Inutile de vous dire que nous avons vécu des heures difficiles. Il nous fallait concilier l'intérêt particulier de chaque Unité avec l'intérêt plus général du département. Notre mission n'était pas sans danger. Nous avions assurément la confiance de nos chefs. Il nous fallait gagner celle des officiers médicaux. Une fausse manœuvre eût pu nous faire perdre la première

et manquer la deuxième. Rendons ici hommage à l'esprit vraiment désintéressé de tous les officiers médicaux. Toujours, ils surent accepter dans l'intérêt du Service les idées et les méthodes de travail, qui, parfois, n'avaient pas l'heur de leur plaire.

La politique du bureau-chef a toujours été d'uniformiser autant qu'il fût possible le travail des Unités. Nos grands problèmes de santé publique étant les mêmes pratiquement dans tous les comtés de notre province, il n'y avait pas de raison pour que des méthodes radicalement différentes fussent employées pour les résoudre. D'autre part, il ne fallait pas non plus, sous prétexte d'uniformiser, paralyser l'initiative généreuse de tous nos travailleurs en hygiène publique pour en faire des instruments mécaniques. Ce que les directeurs voulaient, c'était tout simplement que chaque Unité s'appliquât à poursuivre de front un travail raisonné dans chaque municipalité, et cela pour toutes les questions qui intéressent la santé publique. Or si nous consultons le rapport annuel de 1930, nous voyons certaines Unités ne faire que de la puériculture et pratiquement rien autre chose. D'autres, ne faisaient que de l'inspection scolaire. Un certain nombre n'avaient pour toute activité que les cliniques de tuberculose. Et, encore, toutes ces activités ne devaient s'exercer que durant la belle saison. L'immunisation contre la diphtérie n'était pratiquée que dans quelques rares Unités. Ce fut la tâche des inspecteurs de faire accepter par tous les officiers médicaux l'idée d'une plus grande variété dans leurs travaux. Le moyen le plus efficace qu'ils avaient à leur disposition, c'était le programme annuel ou semi-annuel. Seul, cependant, le directeur pouvait imposer une telle mesure. Il fallait lui en démontrer l'opportunité. Les inspecteurs tentèrent l'aventure et remportèrent un succès complet. Depuis deux ans, chaque officier médical fait son programme jour par jour, six mois à l'avance, et cela pour chacun des membres de son personnel. Ces programmes sont révisés au département. Tous sont faits de la même manière et contiennent pratiquement les mêmes activités: propagande, inspections, puériculture, tuberculose, immunisation anti-diphtérique, contrôle des maladies contagieuses, etc.

De cette identité des programmes, devait naître l'uniformité des méthodes techniques et la standardisation des fiches. Celles-ci, on ne doit pas l'oublier, sont faites pour venir en aide au travail, et on ne doit jamais prendre l'inverse pour la vérité. Nous avons importé des Etats-Unis un nombre considérable de formules compliquées dont la plupart ne répondait pas du tout à nos besoins. Ce fut la tâche des inspecteurs d'en soumettre au directeur une modification radicale. Maintenant, toutes nos feuilles de rapports sont modifiées grâce au travail de collaboration des inspecteurs et des officiers médicaux.

Les Unités sanitaires, comme toutes les organisations nouvelles allaient certainement subir, un jour ou l'autre, le feu de la critique. Il fallait se mettre en mesure de répondre victorieusement à toutes les attaques. Nous n'avions pas le choix entre différents moyens de défense. Une seule arme restait à notre disposition: le travail. Les pertes de temps et les tâtonnements que nous avions éliminés par le programme, nous permettaient d'intensifier le travail sans un surcroît d'efforts. Tout le monde mit l'épaule à la roue et les résultats



furent merveilleux. Les cliniques de puériculture, de 1000 qu'elles étaient en 1931, passèrent à 3700 en 1933, avec une assistance de 25,000 bébés pour la première année et 84,000 pour la dernière. L'hygiène pré-natale reçut une poussée également vigoureuse. L'année où l'inspection des Unités sanitaires fut mise en vigueur, les rapports nous donnent 9000 visites faites aux prénatales par nos infirmières. En 1933, 18,000 visites furent enregistrées, 782 démonstrations maternelles furent données avec une assistance de plus de 16,000 mamans. On constate la même progression dans le travail contre la tuberculose: 800 cliniques avec 23,000 d'assistance en 1931 et 1155 cliniques avec 30,000 d'assistance en 1933. Dans l'espace de deux ans, les visites à domicile sont passées de 103,000 à 203,000. Je n'en finirais plus dans cette énumération, s'il me fallait repasser tous les items contenus dans les rapports annuels, et en particulier celui qui a trait à notre magnifique campagne d'immunisation contre la diphtérie. Notre travail de collaboration avec le personnel des unités n'a pas seulement réussi à décupler les activités déjà existantes, mais il a trouvé moyen d'en créer de nouvelles. Les classes de petites-mères, les classes de nutrition, les cours de premiers soins sont des oeuvres qui fleurissent maintenant dans la plupart des Unités et dont la création revient pour une bonne part aux suggestions des inspecteurs.

Dois-je ajouter que cet accroissement prodigieux de toutes nos activités s'est fait sans une augmentation proportionnelle de dépenses pour le Service. Ne serait-il permis d'affirmer que tout cela fut fait sans surcroît d'efforts. C'est là qu'apparaît dans toute sa valeur l'idée d'uniformisation et de coordination pour laquelle l'inspection fut créée.

Tout ce que je viens de dire est bien suffisant, je crois pour définir ce qui constitue le travail accompli par les inspecteurs. Ils ont pourtant d'autres titres à réclamer. N'est-il pas vrai qu'ils ont contribué à l'avancement scientifique des infirmières et des inspecteurs sanitaires.

A la suggestion des inspecteurs, le directeur et son assistant décidèrent que des études spéciales et des examens périodiques s'imposaient tant pour les infirmières que pour les inspecteurs sanitaires. On ne saurait nier les résultats merveilleux qui suivirent cette politique. La compétence de nos infirmières leur gagne, auprès des mamans, une popularité des plus enviables. Pour s'en convaincre, on n'a qu'à prêter l'oreille à certaines critiques trop intéressées dont elles sont l'objet, de la part de quelques incompetents de la profession médicale.

Il ya bien d'autres oeuvres que l'inspection pourrait citer à son crédit. La rédaction des comptes et des rapports, la correspondance en général, la classification des documents, la tenue des livres, ont aujourd'hui un cachet de précision et de clarté qu'on ne trouvait pas avant l'ère de l'inspection.

Voilà, résumé bien sommairement, le travail accompli par les inspecteurs. L'étranger qui visiterait notre province depuis Gaspé jusqu'au Témiscamingue, verrait dans chacune de nos Unités, le même programme et la même doctrine prêchée à notre population. Peut-être déplorerait-il le manque de travaux personnels, l'absence de recherches et de publications scientifiques chez nos officiers médicaux et nos visiteuses d'hygiène. Qu'il me soit permis d'affirmer ici que toutes ces lacunes seront comblées. Elles sont, à l'heure actuelle,



l'objet d'une étude approfondie de la part des inspecteurs d'Unités et font partie d'un second plan triennal qui débute cette année.

### ABSTRACT

**A**S the number of counties organized with health units increased in the province, the necessity of a system of inspection was recognized by the Provincial Bureau of Health. Visits of inspection provide adequate facilities for communication between the central office and the local units. In 1931 two inspectors were appointed and in the following year two additional appointments were made. At present, the staff of inspectors numbers five. Each of these officers is a physician duly qualified in public health and gives his full time to visiting the units. As inspectors, one of their primary duties is to observe the conduct of the work throughout the county and furnish detailed reports to the Director of the Provincial Bureau. Their principal duty, however, is to stimulate and co-ordinate the activities of the various units in their respective areas, bringing helpful suggestions and aiding in carrying them out. To permit the work being accomplished efficiently, each health unit must have a well defined programme prepared a year in advance. In this way valuable publicity can be given to the plans through local agencies and the work conducted without loss of time. On the suggestion of the inspectors the preparation of such a written programme was made compulsory.

The inspectors communicate the major instructions of the Provincial Bureau to the local units. There are so many details in the organization and administration of a health unit service that it is impossible to explain these satisfactorily by correspondence. Furthermore, the central office requires regular reports to be made so that the Department may be fully informed of the work undertaken, and it is necessary that these reports be made on standard forms. The inspectors instruct the officers in charge of the units regarding the proper use of these forms. Special studies and the holding of examinations periodically for public health nurses and sanitary inspectors have been provided following the recommendation of the inspectors. This provision has improved greatly the competency of nurses and inspectors in health units.

Reviewing the work of the past three years, the value of the inspectors is evident. The amount of work accomplished by each unit has been almost doubled. New activities have been undertaken, including the giving of lectures on first aid, on nutrition, and the organization of little mothers' classes. This has been accomplished by the inspectors under the direction of Dr. Lessard, Director of the Provincial Bureau of Health, and his assistant, Dr. Nadeau, with the active co-operation of the medical officers of the units.

A visitor to our province will find the same programme in every health unit and the same methods being used to promote public health. The results have been highly satisfactory and much has been accomplished during the past three years. There still remains a large amount to be undertaken. It is our hope that in the not too distant future there may be time to conduct studies of certain problems and to publish the results of the work of the health units of which we shall all be proud.

# Reporting of Communicable Diseases in Health Units\*

A. R. FOLEY, M.D., DR. P.H.

*Epidemiologist, Provincial Bureau of Health, Quebec*

THE Quebec public health regulations require that each case of a communicable disease be reported to the health authorities. The health authority, in cities and towns, is the city health department, in health units the medical health officer, and in other parts of the province the municipal council or its bureau of health. Each of these three local health authorities is required to report its cases to the Provincial Bureau of Health for statistical purposes, for control and supervision.

In Quebec there are nine cities, population of 10,000 or more, namely Hull, Lachine, Montreal, Outremont, Quebec, Sherbrooke, Trois-Rivières, Verdun and Westmount. The remaining population of the province lives in smaller centres and in the rural areas of the counties, a large part of which have full-time health unit organizations. In this paper "cities" will refer to the group of nine cities previously named, "health units" to the counties organized under this system, and "sanitary districts" to the other counties not yet so organized.

It is the purpose of this presentation to compare the efficacy of the reporting of communicable diseases in these three sanitary divisions of our province, thus establishing the relative completeness of the notification of cases in the health units. The density of the population and the more crowded conditions of living in cities are factors favorable to the spreading of infectious diseases. Morbidity rates of cities cannot be compared fairly with the rates obtained in the rural sections of the province. Our desire is not to criticize one system or to "boost" the other, but to weigh the results obtained in each of these territorial divisions.

To decrease the possibility of variation by chance, the total morbidity rate has been calculated, using the average number of cases of infectious diseases reported for the two years 1932 and 1933 and the average population for the same years expressed as a rate per 100,000 population. In this manner we have lessened the possibilities of variation due to chance, to a local epidemic of a specified disease, and to the temporary deficiency of an officer charged with the reporting of cases, while the value of the factor "time" has been doubled.

The populations dealt with are rather substantial. For the period under study, the average populations were:

Nine cities .....	1,230,205
Sanitary districts .....	857,442
Health units .....	863,660
Total for province .....	2,951,307

\*Presented before the Vital Statistics Section at the Twenty-Third Annual Meeting of the Canadian Public Health Association, Montreal, June, 1934.

To permit of the comparison of the mortality rates in the different territorial divisions—namely, in the province as a whole, in the cities, in the sanitary districts, and in the health units—the respective rates are presented for the important communicable diseases, with short discussions.

#### TYPHOID AND PARATYPHOID FEVERS

##### *Morbidity Rate, 1932-33, per 100,000 Population*

*Province: 49. Cities: 22. Districts: 79. Health Units: 61.*

The occurrence of typhoid fever is still very high in our province, but it has been decreasing steadily for the past few years. Typhoid is more prevalent in the rural than in the urban population: the cities enjoy a pure water supply, the pasteurization of milk and a system of sewage disposal. In the rural parts these safeguards are far from being general and the morbidity rate is 79 in the districts and 61 in the health units. The slightly lower rate of the health units is probably the result of systematic vaccination of contacts. An investigation is held for every case of typhoid fever reported in the province and although we cannot claim to know of one hundred per cent of the cases, we believe that very few remain unreported.

#### SCARLET FEVER

##### *Morbidity Rate, 1932-33, per 100,000 Population*

*Province: 113. Cities: 178. Districts: 56. Health Units: 77.*

The morbidity rates from scarlet fever are much higher in cities and this may be credited to greater facilities for its transmission. In the rural areas the districts have a rate of 56 and the health units 77. There is no reason why the attack rate should not be the same in both these areas and the higher rate of the health units is the result of a more complete reporting of cases.

#### MEASLES

##### *Morbidity Rate, 1932-33, per 100,000 Population*

*Province: 217. Cities: 261. Districts: 87. Health Units: 283.*

This disease presents a different distribution of cases. The attack rate is higher in the health units than in the cities, but very low in the districts. The rate for the cities seems to be normal; that of the districts is low. The high rate of the health units is partly the result of an epidemic wave that swept over the counties located in the lower St. Lawrence valley; this was the first epidemic of measles occurring in more than twenty years and almost all of the

susceptible persons, whether infants or adults, developed the disease. The morbidity rate obtained in the units speaks very highly for the thoroughness of the reporting of cases.

#### DIPHTHERIA

*Morbidity Rate, 1932-33, per 100,000 Population*

Province: 43.      Cities: 62.      Districts: 35.      Health Units: 28.

The attack rate varies in the three divisions. It is certainly higher in the cities than in the rural areas and still higher in the districts than in the health units. We have reason to believe that we know of all cases occurring within the limits of the health units. The low morbidity rate of the health unit is the result of the untiring campaign of immunization against diphtheria conducted by the medical officers.

#### WHOOPING COUGH

*Morbidity Rate, 1932-33, per 100,000 Population*

Province: 145.      Cities: 249.      Districts: 46.      Health Units: 93.

In whooping cough, it is expected that a higher rate will prevail in the cities. The attack rate, though lower, should be substantially alike in the other parts of the province. The rate occurring in districts, however, is exactly fifty per cent lower than the rate of the units. This difference must be credited to better notification.

#### POLIOMYELITIS

*Morbidity Rate, 1932-33, per 100,000 Population*

Province: 15.      Cities: 15.      Districts: 16.      Health Units: 14.

An epidemic of poliomyelitis occurred during the period under study. The cities and the country were equally attacked. The facts that each case was investigated, that the disease was feared by the people, that it was known that the use of human convalescent serum may prevent paralysis or death, and that the serum was supplied by the health authorities, have made poliomyelitis the disease in which the reporting has been complete. The rates are statistically the same in the three areas.

#### TUBERCULOSIS

*Morbidity Rate, 1932-33, per 100,000 Population*

Province: 110.      Cities: 188.      Districts: 22.      Health Units: 85.

The detection of tuberculosis in cities began years ago with social service work in institutions, the aid of the city health department, the general use of dispensary and hospital facilities. The rural areas have not enjoyed such advantages. However, in the health units the value of services of the travelling

chest clinics for the diagnosis of tuberculosis is evidenced by the reporting of a larger number of cases than in the districts where the clinics are not held. The rate for the units is four times that of the districts.

CHICKEN POX, GERMAN MEASLES, AND MUMPS  
*Morbidity Rate, 1932-33, per 100,000 Population*

Chicken-pox:	Province: 165.	Cities: 308.	Districts: 41.	Units: 87.
German Measles:	9.	9.	6.	13.
Mumps:	94.	213.	6.	12.

The attack-rate is different in the three diseases. In a general way, however, for any of the diseases, the rates obtained in the health units are twice those for the districts. Here again, the system of reporting of communicable diseases in the health units proves its effectiveness.

*Why Reporting is Better*

The comparisons made establish the point that was to be proved. The difference found in reporting between health units and the districts may be explained in a few words. The sanitary district is under the supervision of an inspector who has from 30 to 75 municipalities in his territory of inspection. A man cannot be at more than one place at one time and it cannot be expected that one man alone, without help, will be able to provide a complete health organization in 75 different municipalities. For the reporting of communicable diseases, he relies on the co-operation of the medical profession, which, in some places, might be presented as a slow moving-picture.

The health unit, however, has a staff composed of the medical officer, the sanitary inspector and from two to four public health nurses. The average number of municipalities in a unit is about thirty. All the known cases of communicable diseases are investigated and new or old cases are detected. The medical profession reports more readily since any unreported cases are likely to be found by the staff of the unit later. The examination in school brings to light many missed cases, and a system of reporting to the health units the absence of children attending the schools, completes an efficient organization. Measures of prevention certainly decrease the number of secondary cases. However, the units still have a higher attack-rate than the districts, notwithstanding this more efficient control, indicating the thoroughness of reporting.

The first requisite in the control of communicable diseases is the knowledge of their existence. The reporting of communicable diseases has proved to be satisfactory in the health units and, as epidemiologist of the Provincial Bureau of Health, I am looking forward eagerly to the day when, outside of the cities, the whole province of Quebec will be covered with health units.

---

## EDITORIAL SECTION

### EDITORIAL BOARD

R. D. DEFRIES, M.D., D.P.H., *Chairman*  
J. T. PHAIR, M.B., D.P.H., AND N. E. MCKINNON, M.B., *Associate Chairmen*  
R. L. RANDALL, *Editorial Assistant*

G. D. PORTER, M.B., <i>Public Health Administration.</i>	D. T. FRASER, B.A., M.B., D.P.H., <i>Mental Hygiene.</i>
A. L. MCKAY, B.A., M.B., D.P.H., <i>Epidemiology and Vital Statistics.</i>	A. E. BERRY, M.A.Sc., C.E., Ph.D., <i>Public Health Engineering.</i>
A. L. McNABB, D.V.Sc., <i>Laboratory.</i>	C. ETHEL GREENWOOD, REG.N., <i>Public Health Nursing.</i>
GORDON BATES, M.B., <i>Social Hygiene.</i>	J. G. CUNNINGHAM, B.A., M.B., D.P.H., <i>Industrial Hygiene.</i>
E. W. MCHENRY, M.A., Ph.D., <i>Food, Drugs and Nutrition.</i>	JAMES CRAIGIE, M.B., Ch.B., Ph.D., D.P.H. <i>St. And., Current Health Literature.</i>
MARY POWER, B.A., <i>Public Health Education.</i>	
R. R. MCCLENNAHAN, B.A., M.B., D.P.H., and A. H. SELLERS, B.A., M.D., D.P.H., <i>Books and Reports.</i>	

### FEDERAL AND PROVINCIAL RESPONSIBILITIES IN PUBLIC HEALTH

THE announcement by the Honourable R. B. Bennett, Prime Minister of Canada, that the Government plans to call together the premiers and other representatives of the various provinces to discuss the whole question of federal and provincial responsibilities in the light of present needs is indeed most significant. The British North America Act of 1867 has always been the basis of settlement of all questions relating to federal and provincial authority. In tracing the development of public health in Upper Canada, in this issue, Dr. Brandon draws attention to the paucity of reference to health matters in this Act. When one considers, however, that, when the Act was written, no part of Canada had a central authority for the direction of the efforts of the few existing local municipal health departments and that governmental authorities deemed action necessary only when cholera, smallpox and other epidemic disease appeared, it is not surprising that the Act defined the federal government responsibilities as relating to the census and statistics, quarantine and the establishment and maintenance of marine hospitals, leaving to the provinces matters relating to hospitals, asylums and charities. With such limited definition of jurisdiction, questions have been raised from time to time regarding the responsibility of the Dominion and the provinces for health activities not defined in the Act.

Participation of various federal departments in health matters became necessary as new Acts of Parliament relating to the control of food and drugs, to sanitary problems of interprovincial and international interest, the control of animal contagious diseases and the requirements of medical inspection of immigrants were promulgated. During this time a new era of public health had commenced with enlarged activity on the part of provincial authorities and with the advent of various national voluntary health organizations. The mobilization of the Canadian Expeditionary Forces brought before the whole country the necessity of greater attention being paid to the physical and mental fitness and the value of modern preventive medicine in conserving the life of the nation. The creation of the federal department of health

in 1919 was the result of an insistent demand of all forces who looked for a greater participation of the Dominion Government in health matters, believing that only by such co-operation could the best results be obtained. In this department practically all of the public health activities of the various departments of the Dominion Government were brought together.

Part of the programme of the national department of health was the institution of a venereal disease control campaign in which the Dominion Government financially assisted the provinces in making possible the establishment of treatment clinics, granting at the same time assistance to the national voluntary agency which was actively aiding in the campaign. This action of the Government was in accordance with the requests made by provincial health representatives meeting in conference and was highly important, as it was the first time that the Dominion Government had participated in health work jointly with the provinces. It may be argued that this action was taken by the Government because of the insistence of the provinces that the problem of venereal disease, accentuated by the war, was not fairly one which they should assume entirely. While the national department may not have fulfilled all the hopes of its most ardent advocates, it gave promise of ultimately doing much to co-ordinate provincial activities in the field of health protection. It was, however, a disappointment to the public health forces in Canada that the Government added to the responsibilities of the Minister and the Deputy Minister all matters relating to the re-establishment of returned soldiers and to pensions, indicating this in the name of "Department of Pensions and National Health". It was realized at once that the development of a strong, progressive national department of health was jeopardized by this arrangement.

With the economic stringency of the past five years no enlargement of activities of the national department of health could be made, nor could further consideration be given by the Government to such matters as federal participation in plans for health insurance and for rural health services in various provinces. Withdrawal of aid to the provinces in the control of venereal disease was effected first in part and then in entirety in 1931. The direct co-operation of the Dominion in child welfare was discontinued this year. Meanwhile, the economic necessities of the hour had forced before the Provincial and the Dominion Governments the urgency of consideration of unemployment insurance, medical and nursing care, and other social legislation. In several of the provinces health insurance plans have been studied by commissions and favourable reports made to the government. The adoption of social health measures by the provinces would appear to be largely dependent on Dominion participation.

The calling of the conference by Premier Bennett grows out of the urgent necessity for a redefinition of provincial and federal responsibilities, and of these responsibilities no more important considerations demand attention than matters relating to public health.



### THIRD ANNUAL CHRISTMAS MEETING

#### LABORATORY SECTION

#### CANADIAN PUBLIC HEALTH ASSOCIATION

ROYAL YORK HOTEL, TORONTO

FRIDAY, DECEMBER 21, 1934

THE introduction of a mid-year meeting of the Laboratory Section in 1932, and its repetition last year, met such an enthusiastic response that a meeting is being planned for this year. The date chosen is Friday, December 21st, and the place the Royal York Hotel, Toronto.

The first of these mid-year meetings was arranged by the Executive Committee as an experiment. It was believed that those in Canada engaged in pathology, parasitology, bacteriology and chemistry as related to public health would welcome an opportunity for the presentation of recent work during the Christmas holiday period. The response to this effort to make the Section of wider service was gratifying and it was evident that there was a definite place among the Association's activities for such a mid-year conference of laboratory workers. Last year's meeting was even more successful than the first, both in point of attendance and interest, and with the announcement of a third meeting the Christmas session of the Laboratory Section passes from the experimental stage to assume, it is hoped, a character as permanent as that of the Association's annual general meeting.

A post card of enquiry is being sent to all members to determine if the meetings should extend over two days, with an afternoon session on Thursday, December 20th, and two sessions on Friday, December 21st. If the sessions are held only on Friday, it is necessary to have two programmes presented simultaneously during the morning, one in general bacteriology and one in medical bacteriology. If a session be held on Thursday afternoon, only one programme, presenting papers in the various fields of interest, will be offered at each session.

The programme committee is very pleased to announce that an invitation has been extended to Dr. G. W. McCoy, Director of the National Institute of Health, Washington, to be the guest speaker. Dr. McCoy has directed the investigations made into the outbreak of amoebic dysentery in Chicago and further studies have been conducted during the past summer. It is hoped that Dr. McCoy may speak on this subject.

The committee will be pleased to receive the titles of suggested papers for inclusion in the programme. Demonstrations will be a feature of the meeting and this portion of the programme will, as usual, offer practical, helpful suggestions. The sessions will be of interest not only to laboratory workers, but also to epidemiologists and to medical officers of health.

# QUARTERLY LETTER FROM GREAT BRITAIN

GEORGE F. BUCHAN, M.D., F.R.C.P., D.P.H.

*London*

## MEDICINE AND PUBLIC HEALTH

ANY of my Canadian colleagues who desire to get a comprehensive knowledge of medical and public health work in England should come to this country in July. The whole month is practically taken up with conferences. The British Medical Association usually holds its Annual Meeting during this period; so also does the Royal Sanitary Institute. The Tuberculosis Association generally has its Annual Meeting in this month and then there is the National Conference for Maternity and Child Welfare which was held this year in Birmingham and the Annual Provincial Meeting of the Maternity and Child Welfare Section of the Society of Medical Officers of Health, which took place in Glasgow. All of these meetings are of the greatest possible interest and various aspects of public health work are discussed at all of them.

## BRITISH MEDICAL ASSOCIATION ANNUAL MEETING

AT the British Medical Association this year there was an important discussion on "Are we satisfied with the results of ante-natal care?" which was opened by two obstetricians and two representatives of the public health service. The general conclusion was that progress is being made, although it is not so rapid as we would like. Ante-natal care includes both the mother and the child and it appears not improbable that to get the best results for both, some new orientation of specialism in medicine is desirable. The history of medicine shows that obstetrics in the limited sense has always been regarded as a special art. But the objective after all from the national point of view, is the rearing of a healthy race and both the mother

and the child have to be considered. It would therefore appear that a new kind of medical specialist is required for this work: one whose functions would be, first, ante-natal care in its wide sense, having regard to both the mother and the unborn child; secondly, the confinement of the mother; and, thirdly, the care of the mother and child for a period after the birth. A wider specialism on these lines would probably secure better results in the rearing of healthy children than specialisms limited, as at present, to the much narrower fields of obstetrics and gynaecology on the one hand and paediatrics on the other.

Of course many other subjects of wide medical interest were discussed at this meeting, but it was this question of ante-natal care that particularly interested me and which no doubt is interesting many other health workers in Canada and elsewhere throughout the world.

## ROYAL SANITARY INSTITUTE CONGRESS

THIS Congress was held at Bristol and as usual was a great success. It was attended by many representatives of local authorities and by many medical officers in the public health service. The feature of the meeting was the attendance of Sir Hilton Young, Minister of Health, to deliver an address to the Congress on Housing. This address was enthusiastically received and Sir Hilton Young left the Congress well assured that local authorities and their officers would do all they could to blot out the slums of England within the five years allowed by the Minister.

## MORE ABOUT MILK

THE use of milk as an article of diet is being greatly advocated in England at the present time and in my

last letter I indicated some of the guiding principles in the selection of the milk supply. A further step forward has been taken by the Board of Education, which in a circular issued on the 5th September, 1934, advocates the supply of free milk to children attending public elementary schools who are unable to pay. The Board consider that the selection of children for free milk should be made by school medical officers and for this purpose they regard it as proper that children should be selected who show symptoms, however slight, of subnormal nutrition. This circular casts an important duty on school medical officers and it is hoped, apart from the question of the value of milk as a food, that it will lead to an elucidation of the facts which will guide the medical profession in saying what normal nutrition is and what are the physical signs of malnutrition. It is not easy to lay down a standard of normal nutrition and help on this subject from any quarter will certainly be of very great value to the public health.

ANNUAL PROVINCIAL MEETING OF THE  
MATERNITY AND CHILD WELFARE  
GROUP OF THE SOCIETY OF MEDICAL  
OFFICERS OF HEALTH

THE Congress of the Royal Sanitary Institute is so well known that I do not propose to say more about it at the present time, but it may be of interest to my readers if I tell them a little about the Society of Medical Officers of Health and its groups and particularly the Annual Provincial Meeting of the Maternity and Child Welfare Group held in Glasgow this year.

The Society of Medical Officers of Health has Branches and Groups. The former correspond to localities; the latter to interests. The Maternity and Child Welfare Group is composed of a mixture of administrative and clinical specialist officers, including medical officers of health and their full and part time assistants and members of the staff of paediatric and obstet-

rical hospitals. The main Maternity and Child Welfare Group is attached to the parent Society and holds its meetings in London, but strong Sub-groups exist in the Branch areas, all over the country. Meetings are held monthly, at which lectures, discussions, or clinical demonstrations take place, embracing the various aspects of maternity and child welfare work. Apart from the educative and social value to its members, this Group maintains a link between the curative and preventive sides of this division of medicine which is found to be of great practical value.

Once a year, a three-days' meeting is arranged in one of the larger provincial centres and is attended by members from all over the country. Many are sent as delegates by their local authorities and report back to them any new developments in the work. In this way, experience can be pooled for the benefit of the public. Glasgow was the place of meeting this year and the City Corporation and its medical staff combined with the local hospitals to give the delegates a very interesting and instructive time. The efficiency of Glasgow and its institutions is probably as well known on one side of the Atlantic as the other. In Mearns Kirk Orthopaedic Hospital for Children and in Stobhill General Municipal Hospital, both of which delegates saw and admired, it possesses two of the finest institutions of their respective types in the country. It is also pushing on with the housing schemes, to meet what has always been one of its most difficult problems, and the Lord Provost of the City, who welcomed the meeting, took care to see that this aspect of public health work so vital to the well-being of mothers and children was not overlooked. Members were accordingly conducted round representative schemes by experts, who explained the different varieties of house provided, conditions of entry, rents and methods of control of tenants.

In the lectures, discussions and clin-

ical demonstrations which took place at the hospitals, a prominent subject was the adequacy of intra- and ante-natal care in the prevention of maternal mortality, and Professor James Hendry of Glasgow University had much to criticise in both. He did not consider there was close enough co-operation between those, whether working privately or in public practice, who were responsible for the ante-natal supervision of the mother and those who saw her through her confinement and puerperium. As regards midwifery, he had been studying Holland and her methods and thought England had to improve particularly in respect of her methods for the recruitment and training of midwives and the establishment of a proper status for the finished product. In matters relating to obstetrics, speaking generally, England is probably well in the van, and many of the schemes of local authorities are very comprehensive and excellent. But so long as the maternal mortality rate continues to be stationary, all is not well and criticism and suggestions for improvement are to be welcomed.

Another matter discussed was the use of serum in the prevention of measles, into which Dr. T. M. Hunter, Medical Superintendent of Lightburn Fever Hospital, Lanarkshire, had been enquiring during a recent large epidemic in the city. He concluded that public health authorities should always have such serum available for the use of very young children, or those exposed to infection in circumstances,

e.g., while suffering from another disease, where the attack would be particularly dangerous. He did not think enough was known as yet to justify its general application.

Members had a very kindly welcome from this famous city on the Clyde, and some of those from the south, who had never seen what Scotland has to offer in the way of beauty of scenery, were given an evening glimpse of Loch Lomond to carry away as a memento and inducement to return.

#### SANITARY INSPECTORS' ASSOCIATION

I HAVE just returned from the Annual Conference of this Association which this year was held at Southport in the first week of September. Sir Leonard Hill is the President of the Association and told the Conference some interesting facts about some of his research work. The Congress was extremely well attended. The main subjects for discussion were housing and public cleansing and the training of the sanitary inspector. Great enthusiasm was displayed at all the sessions of the Conference and it may safely be said that all who attended were greatly impressed by the keenness and knowledge of the Inspector. Good weather favoured the meeting and the Corporation of Southport extended hospitality to the visitors on a splendid and much appreciated scale. This is a Conference well worth attending and I enjoyed myself greatly.

---

---

## PUBLIC HEALTH NURSING

---

### *Possibilities of Integrating Mental Hygiene in an Infant and Pre-School Child Programme*

ALICE THOMSON, REG.N.

*Supervisor, Maternal and Infant Welfare, Division of Public Health Nursing,  
Department of Public Health, Toronto*

PROBABLY it is not necessary to state that the mental hygiene of the young child is at least as important as that of any other member of the community, if indeed it is not more important. While, of course, it is possible to change habits and attitudes in older children and adults, this would not be necessary in most cases if the child were trained properly in infancy and the pre-school period. The adult who is untruthful probably received his "set" in this direction in early childhood; the adolescent who has bad sex habits probably had no sex instruction in early childhood and lived in an atmosphere where sex matters were not treated in a wholesome manner. Our attitudes toward other people, toward our problems, our recreation, our work, our way of meeting difficulties, are built up through the years and our trends are pretty well established by the time we are of school age. Psychologists studying a maladjusted adult ask such questions as: What kind of childhood did he have? Was he happy? Did he play with other children? Did he eat well and sleep well? Did he have satisfactory toilet habits?

Granted that the infancy and pre-school period is an important one in the adjustment and character building of the child, the question has to be answered: Of what does mental hygiene of children of this age-group consist? These children, especially the babies, have not yet become behaviour problems. The answer is that the infancy and pre-school period is the

preventive period in mental hygiene. Work done then prevents the development of problems which would need corrective work later. It is not as spectacular as work with the older child who has developed habits of stealing, lying, truancy, etc., but it is as important; some people think it more important. It consists largely of what we usually call habit training: teaching the child to eat willingly and happily the food that is put before him at the time that it is put before him, teaching him to go to bed and to sleep at the required times, teaching him proper toilet habits, proper play habits, giving him a proper attitude toward sex, and teaching him emotional control.

How can this teaching be integrated in an infant welfare and pre-school programme? In the first place, it cannot be included in the programme unless the nurse knows what material to teach. She may get this from reading, from courses; if her organization has a psychiatrist on the staff, she may do her mental hygiene teaching under his direction; but practically every nurse with the usual preparation for public health work needs further instructions before she can teach the principles of child training.

Much of the nurse's present teaching about the care of babies in homes, child health centres and hospital clinics—regular feeding, regular hours of sleep, a definite daily routine, not picking the baby up at odd moments, not using a "comfort"—is in reality mental hygiene teaching, but very

often the nurse does not emphasize the mental hygiene aspect of this teaching or go into sufficient detail. For example, a nurse may emphasize the value of regular feeding from a physical point of view—milk stays in the stomach two hours and then the stomach needs at least one hour's rest—without explaining that regularity is the basis for a good appetite and good food habits later, and that the baby who has been fed regularly every four hours, with nothing between, is more likely to become the child who eats his meals happily than is the baby who has no habits of regularity. The teaching about the "comfort" has as much value from the mental hygiene point of view as from the physical, yet one often does not hear the mental hygiene aspect of it stressed. Although the value of fresh air and sunshine is taught, often no mention is made of the need for equipment for play and a place for play, and yet we know that in the mental and social development of the child suitable play is as important as fresh air is in his physical development; the two go together. Nurses have been known to say to the mother of a two-year-old baby, "And you put him to bed at seven o'clock, Mrs. Brown?" Mrs. Brown replies, "Well, I used to, but he didn't seem sleepy and he used to get up and follow me downstairs"; or, "He just stood up in his cot and yelled, so I began keeping him up till he seemed sleepy. Sometimes it's nearly ten o'clock before I get him to bed." And without going into any detail as to

what to do about the crying, the child's getting up, etc., the nurse replies, "I would put him to bed at seven anyway. You see, he needs the rest."

There are certain aspects of character development, such as sex training, emotional control, and truthfulness, which are not so closely connected with physical health and which the nurse often, therefore, has not considered as being in her field. They are, however, and she should deal with them as she does with other habits closely connected with physical hygiene: sleeping, eating, bowel and bladder control, etc.

One way, and probably the best way, in which mental hygiene can be included in the infant and pre-school child programme is through classes in which child training is taught by nurses to groups of parents. There are two advantages in this method: firstly, the material is rather extensive to be covered in the short time usually allowed for individual instruction and, secondly, there is an advantage in having several mothers together in that experiences may be pooled. Mothers who are shy or backward about stating their difficulties often gain courage by hearing that other people have the same or even more serious problems.

In conclusion one must emphasize again that the first step to be taken by any organization wishing to carry on this work is to provide training for the nurses, and to provide if possible a psychiatrist or mental hygiene supervisor who will act as adviser or consultant on individual problems and stimulate interest in the whole field.

THIRD ANNUAL CHRISTMAS MEETING  
LABORATORY SECTION  
ROYAL YORK HOTEL, TORONTO  
FRIDAY, DECEMBER 21st, 1934



---

## PUBLIC HEALTH ADMINISTRATION

---

### *Relief Funds and Public Health in the United States*

**T**O-DAY in Canada every government is confronted with the problem of affording relief to the destitute. One is impressed by the fact that the United States have recognized generally the desirability of affording relief beneficiaries an opportunity to work for the aid given to them, as against the practice of making direct grants of money or supplies. This method of administering relief to certain classes of beneficiaries had come into general use throughout the country by the summer of 1933.

It is especially instructive to see what federal civil works projects the United States Public Health Service has undertaken. With the increase of unemployment and economic distress in the United States in 1932 the individual states found that they were unable to meet the demands for relief of the destitute. The Federal Government therefore supplemented state and local relief funds through grants to the state relief organizations.

The first of the emergency organizations set up by the Federal Government was the Reconstruction Finance Corporation which provided for Federal participation in state and local relief work. In the spring of 1933 the Federal Emergency Relief Administration was created and \$500,000,000 was set aside to finance participation of the Federal Government in relief activities within the states. In 1933 Congress created the Public Works Administration and appropriated a special fund to be used for the construction of additional public buildings for the Federal Government and for loans to states and municipalities for local construction projects. However, the necessary delays brought the

end of the agricultural season with a more acute unemployment situation.

To allot money direct to the states for immediate expenditure on local works projects, the President set up the Civil Works Administration. The Civil Works Administration considered it desirable that the projects undertaken be in the interest of public welfare and community improvement as far as possible. Accordingly, the Public Health Service was asked, along with other Federal agencies, to suggest projects on which beneficiaries of the Civil Works Administration might be profitably employed. The Public Health Service recommended four projects:

(1) An intensive malaria control drainage programme in 14 States.

(2) Construction of sanitary privies in small towns and villages and in the unserved outskirts of larger cities.

(3) Surveys to determine the extent of endemic typhus fever in rodents in important seaports and certain inland areas where the disease now prevails.

(4) Sealing of abandoned coal mines to reduce the acid wastes being discharged into streams used for water supplies.

In order that these projects might be given proper technical direction, they were placed under the general supervision of the Public Health Service, and special allotments were made to the office of the Surgeon-General for the employment of additional technical supervisory personnel, travelling expenses, purchase of tools, and the like.

The amounts set aside for labor totalled approximately \$4,500,000 for malaria control, \$5,000,000 for com-



munity sanitation, \$1,000,000 for typhus fever surveys, and \$1,500,000 for sealing abandoned coal mines.

Only about one-half the funds were expended because of unavoidable loss of time in organizing the work.

#### *The Results of the Work on Malaria Control*

It is believed that the economic benefit derived from the removal of the malaria hazard will represent an annual saving of not less than \$100,000,000.

#### *Community Sanitation*

This work was carried on in 24 states, including all the Southern states, Delaware, Pennsylvania, Ohio, Indiana, Illinois, Kansas and Washington.

The health officers of all states were informed of the possibility of using work-relief labor on privy construction and were given an opportunity to signify their willingness to participate in the project.

The programme in each state was set up under and administered through the state department of health. The supervisory personnel consisted of a state director, in general charge of the whole programme in the field; district supervisors, selected from the unemployment rolls, each having responsibility for the work in a group of counties; and a county supervisor for each county, selected from the local unemployment rolls. It was the function of this force to promote local adoption of the programme, sell the project to individuals and train and supervise labour engaged in construction. Labour was assigned for the construction of sanitary privies only where materials were furnished by the property owner or by some public agency such as the county board of education, county supervisors, or the municipal government. Some municipalities purchased the materials in one lot for the sanitation of the entire community, the privies constructed being regard-

ed as a public utility. Others purchased the material in order to take advantage of wholesale prices and expedite the work, and assessed the cost against the property on which the sanitary privies were erected, or provided other means for reimbursing the municipality. In some sections the labour was used to construct privies for farm homes throughout the county, but for the most part the work was confined to unsewered towns and villages and the unsewered sections surrounding the sewered areas of the larger communities. The work was concentrated in those more congested areas because, as the Public Health Service pointed out, the health menace of an insanitary privy is proportionate to the number of persons who live within fly range of it, because typhoid fever is most prevalent in small towns and villages and because more effective supervision could be exercised where the labour could be used in large groups. The local interest that developed in this programme exceeded the most optimistic expectations of everybody connected with it. It is estimated that at the peak of activities there were enough materials on hand and commitments made by property owners to furnish materials to make work for at least five times the number of labourers available.

#### *Accomplishments*

About 225,000 privies were constructed. It is expected that as a result of eliminating insanitary privies there will be a noticeable reduction in the prevalence of excreta-borne diseases. Modern standards of sanitation have been introduced into hundreds of communities and in several states which heretofore have given little attention to practical sanitary privy construction. Besides valuable work on typhus fever control and elimination of rats in a large scale campaign of extermination, approximately 7,000 abandoned coal-mine openings had been closed, according to the last report, and the work was continuing.

---

# EPIDEMIOLOGY AND VITAL STATISTICS

---

## *Smallpox Among Ship's Crew*

C. P. BROWN, M.D., D.P.H.

*Chief, Division of Quarantine,  
Department of Pensions and National Health, Ottawa*

THE British Steamship "King City" arrived at the Quarantine Station at William Head, B.C., on the evening of February 18, 1934, reporting two members of the crew ill with what was considered to be smallpox. One other member of the crew had died on board of the same disease. The crew numbered thirty-four.

Inspection by the quarantine medical officers confirmed the diagnosis. The vessel had sailed from Shanghai on January 31, 1934, after being there four days.

Five cases occurred, of which two resulted fatally. Brief case history notes are as follows:

*Wireless operator.*—He had been ashore at Shanghai and became ill ten days after sailing, dying on February 15th. He was buried at sea.

*Officer H.*—Aged 21 years, vaccinated in childhood. Complained first on February 8th and rash appeared on February 9th. As he had not been ashore at Shanghai, he must have become infected on board from contact, probably with a Chinese stevedore. He was admitted to the Quarantine Hospital on February 18th and discharged on March 14th, having been a discrete case.

*Fireman B.*—Aged 25 years, vaccinated in childhood. Reported ill February 13th and rash appeared on February 14th,—a discrete case.

*Deck boy W.*—Aged 19 years, vac-

inated in childhood. Revaccinated at Quarantine Station February 18th. Detained because of no immunity reaction. He took ill on evening of February 19th and was admitted to hospital. Discharged March 27th,—a discrete case.

*Apprentice T.*—Aged 18 years. Never previously vaccinated. Was vaccinated at the Quarantine Station February 18th, and commenced to "take" four days later. He was admitted to hospital February 25th, became a confluent case, and died on March 9th.

There were thus five cases, one contracting the disease at sea and dying, with vaccination history unknown. Three, vaccinated in childhood, recovered. One, not vaccinated in childhood, died.

The remaining thirty members of the crew gave good "early" reactions. Of these, 11 had not been vaccinated since childhood, one was vaccinated in 1915, one in 1918, 1 in 1929, 2 in 1930, 1 in 1931, and 10 in 1932.

The vessel was released from quarantine on February 20th. This gave time to observe the "early" reactions and to release the crew. In the interval, the crew were bathed and their clothing disinfected. The quarters on boat which had been occupied by the patients were fumigated, their bedding, etc., being brought to shore for this purpose. No further cases developed.

## NEWS FROM THE FIELD

### Anterior Poliomyelitis

**S**INCE the beginning of the year, 2,892 cases of anterior poliomyelitis have been reported in California. Of these, 42.4 per cent were reported from the city of Los Angeles and 4.5 per cent from San Francisco (period ending August 25th). The peak of the epidemic was reached in the week ending June 23rd, when 340 cases were reported. While the peak for San Francisco coincided with this, that for Los Angeles apparently antedated it by two weeks. This epidemic was characterized by a typical incidence-time distribution, the number of cases rising rapidly to a peak and then falling off much more gradually. While the reported cases for the week ending September 22 was 55, the epidemic is definitely on the wane and a gradual decline in the number of cases reported may be expected.

While subsiding in California, the incidence has increased greatly in the state of Washington, the number of reported cases for the weeks ending September 8th, 15th and 22nd being 42, 61 and 71, respectively, compared with 49, 69 and 53 in California. A number of cases have been reported in British Columbia and Alberta, but the incidence is not high.

### Election of Officers American Public Health Association

**T**HE following officers were elected at the sixty-third annual meeting of the American Public Health Association held at Pasadena, California, September 3rd to 6th: president, Dr. E. L. Bishop, Nashville, Tenn.; president-elect, Dr. Walter H. Brown, Palo Alto, Cal.; treasurer, Dr. Louis I. Dublin, New York; and executive secretary, Dr. Kendall Emerson, New York.

### Alberta

**T**HE two health units established at Okotoks-High River and Red Deer completed the three-year trial

period last spring. Although the work accomplished has been most satisfactory, the assumption by the municipalities concerned of one-quarter cost of the services formerly contributed by the Rockefeller Foundation has been difficult owing to present conditions. The Provincial Department of Health is contributing half the cost of the demonstration. Efforts are being made to add other adjacent districts to the Okotoks-High River district in order to meet the situation.

### Manitoba

**A**N addition to the Brandon Mental Hospital accommodating 125 patients is being undertaken at a cost of \$115,000. The addition is urgently needed, as the institution is caring for 300 more than the estimated maximum capacity.

### Ontario

**A** REFRESHER course for public health nurses in industry is being planned by the School of Nursing in co-operation with the Department of University Extension, University of Toronto, for the four days October 24th to 27th. The course will include a consideration of industrial hygiene, emphasizing medical service in industry, principles and practices in industrial nursing, and mental hygiene in industry. Round-table discussions will be arranged and a visit made to an industrial health service.

Among the physicians enrolled for the course leading to the Diploma in Public Health at the School of Hygiene, University of Toronto, are Dr. A. E. Allin, Toronto; Dr. E. D. R. Bissett, Pine Falls, Man.; Dr. M. Bowman, Clanwilliam, Man.; Dr. H. B. Bustin, Fairville, N.B.; Dr. A. M. Clarke, East Saint John, N.B.; Dr. J. B. Cull, Hollyburn, B.C.; Dr. M. R. Elliott, Wawanese, Man.; Dr. R. J. Gibbons, Toronto; Dr. J. M. Hershey, Toronto; Dr. H. B. Hetherington, British Solomon Islands; Dr. F. S.

Lawson, Warkworth, Ont.; Dr. A. G. Mahaffy, New York; and Dr. A. C. McGugan, Edmonton.

### Nova Scotia

**A**T the annual meeting of the Provincial Health Officers' Association held at Yarmouth on July 4th, Dr. A. E. Blackett, New Glasgow, was elected president; Dr. F. O'Neil, Sydney, first vice-president; Dr. H. E. Kelley, Middleton, second vice-president; and Dr. T. I. Byrne, Dartmouth, secretary.

Dr. J. Churchill has been appointed superintendent of the Nova Scotia Hospital, succeeding Dr. F. E. Lawlor, who has retired owing to ill health.

### New Brunswick

**F**OLLOWING the resignation of Dr. F. J. Desmond, medical officer for the Eastern district, who had served in that capacity since the district was established sixteen years ago, the appointment of Dr. J. A. Melanson, D.P.H., has been announced. Dr. Melanson was formerly tuberculosis diagnostician in the Eastern district and recently completed a post-graduate course in public health at the School of Hygiene, University of Toronto.

Dr. E. A. Clarke, assistant superintendent of the Ontario Hospitals staff, is making a study of the psychiatric services of the province on the invitation of the Provincial Government.

### Appointment of R. O. Davison, M.D., as Deputy Minister of Health, Saskatchewan



DR. R. O. DAVISON

**D**R. R. O. DAVISON, formerly Deputy Chairman of the Saskatchewan Cancer Commission and Director of the Division of Communicable Diseases in the Department of Public Health, Saskatchewan, has been appointed Deputy Minister of Health. On August 31st he assumed his new duties in the department in which he has rendered valuable service for the past thirteen years.

Dr. Davison was born in Brantford, Ontario, and was graduated in medicine from the University of Toronto in 1908. Following graduation he engaged in general practice in the Borden district of Saskatchewan until 1921, when he was appointed to the staff of the Department of Public Health. One year later he was called upon to organize a division of communicable disease, and has been Director of this division since that time. He took a keen interest in the efforts to formulate and place in operation a programme

for the control and treatment of cancer and in 1929 was asked to organize the Saskatchewan Cancer Commission, of which he became the first Deputy Chairman. He has now been made Chairman of the Commission, as well as Deputy Minister.

Dr. Davison is an able organizer and administrator, and is an ardent exponent of the wider employment of the practising physician in the field of preventive medicine. His broad outlook on the whole field of medicine and public health has won for him the respect of both the medical profession and the public.

## BOOKS AND REPORTS

### **Survey of Public Health Nursing.**

*By the National Organization for Public Health Nursing, Katharine Tucker, General Director; Hortense Gilbert, Assistant Director for the Survey. Published by The Commonwealth Fund, 41 East 57th Street, New York, 1934. 262 pages. Price, \$2.00.*

In his foreword, Mr. Livingstone Farrand of Cornell University says that the object of the survey is to increase the effectiveness of public health nursing. "Anyone who reads these chapters," he writes, "will be struck by the frank admission of shortcomings as well as by the recognition of opportunity and objectives not yet attained."

In the first chapter, "Purpose, Method and Scope", some of the questions which the Survey set out to answer are stated:

Are there variations of method in public health nursing? What are they? Why are they? Are the generally recognized standards and criteria of the National Organization for Public Health Nursing put into effect? Are these standards and criteria adequate?

The method by which three public health nurses, appointed as surveyors, made a study of public health nursing associations in twenty-eight communities in the United States is described and the basis of selection of these areas explained.

Conclusions and recommendations which one expects to find at the end of the book appear, quite originally, as the second chapter, while the nine following chapters and nine appendices deal with the findings of the Survey and thirty-one tables present valuable data in concise form.

Paragraph headings guide the reader to the desired information on such points as personnel and requirements for appointment; introductory programme; continued staff education; working conditions; health and salary of the staffs; financing the service; community relationships, etc.

The fact that approximately only

one-third of the field nurses employed in the fifty-seven agencies studied were found to have had any theoretical preparation for the work led the Survey Committee to one of its major recommendations. Other interesting recommendations deal with student affiliation and relationship with the medical profession. In connection with governing boards of agencies, it is recommended that there be rotation of members which shall represent wider social groups and be composed of both men and women.

The various sections and chapters of the book contain much valuable information assembled in an interesting way which should be helpful to public health nursing associations in Canada.

E.C.G.

### **Bergey's Manual of Determinative Bacteriology.**

*By David H. Bergey, formerly of the University of Pennsylvania, assisted by a Committee of the Society of American Bacteriology. With an index by Robert S. Breed. Fourth edition, revised and enlarged. Published by the Williams and Wilkins Company, Baltimore, Md., 1934. 664 pages. Price, \$6.00.*

There usually is little for a reviewer to add to what has been written about a book which appears as a fourth edition. Whatever may be said of criticism or of praise has been said long since. When the book in question is so widely known as is Bergey's, one should heed the stop signal. The dominant thought in one's mind is admiration for the author and the committee in tackling the problem of the classification of bacteria. It is fortunate that there is such a book about which a serious controversy may centre, for without such a controversy in the offing no one would be seriously interested in definitive bacteriology.

The bacteriologist will find the references to the literature of very special value. The bookshelf of any bacteriological laboratory would be incomplete without Bergey.

D.T.F.

## CURRENT HEALTH LITERATURE

*These brief abstracts are intended to direct attention to some articles in various journals which have been published during the preceding month. The Secretary of the Editorial Board is pleased to mail any of the journals referred to so that the abstracted article may be read in its entirety. No charge is made for this service. Prompt return (after three days) is requested in order that the journals may be available to other readers.*

### **Effect of a Confidential Enquiry on the Recorded Mortality from Syphilis and Alcoholism**

A survey has been made in Westchester County Health District to determine the extent to which alcoholism and syphilis had been under reported during a two-year period 1931-1933. The completed survey includes an investigation of 5,299 deaths reported by 365 physicians. Data confidentially obtained increased the deaths in which syphilis was regarded as a primary cause from 40 to 79, and deaths in which alcoholism was a primary cause from 28 to 44. Deaths in which syphilis was a primary or contributing cause were increased from 81 to 121, and deaths in which alcoholism was a primary or contributing cause from 138 to 183. The only other causes of death in which the death rates were significantly altered by the survey were aneurysm and non-alcoholic cirrhosis of the liver. The great majority of the physicians co-operating in the survey felt that confidential reporting would result in much greater accuracy in the statement of causes of death.

Matthias Nicoll, Jr., and Marjorie T. Bellows, *Am. J. Pub. Health*, 24: 813 (August), 1934.

### **The Inheritance of Diabetes**

An investigation of the occurrence of diabetes in twins showed that in 13 sets of identical twins, in which one had diabetes, the other twin was diabetic in 9 sets. In 13 sets of dissimilar twins in which one had diabetes, the other twin was diabetic in two sets. The incidence of diabetes in the relatives of a diabetic is significantly greater than in a non-diabetic group. Many blood relatives of diabetic patients have symptomless hyperglycemia, the significance of which is unknown. These instances occurred when one would expect diabetes to develop according to Mendelian inheritance.

Priscilla White, Elliott Joslin and Gregory Pincus, *J.A.M.A.*, 103: 105 (July 14), 1934.

### **Granite Cutting and Cutters in the Vicinity of New York City**

Dust counts made in two representative stone yards greatly exceeded the limits of safety in all operations except machine polishing and sawing. Histories were taken and physical and X-ray examinations were made of 125 granite cutters. In 78 cases (62 per cent) there was evidence of silicosis and the condition was advanced in 41 cases. In 12 cases there was also evidence of tuberculosis and suspicion of this disease in 19 cases. This study reveals that the dust

hazard in granite cutting shops about New York City is not controlled and that the men, in their work in these shops, are subjected to conditions so damaging to health as to require immediate correction. The steps necessary for the control of the hazard are discussed.

Adelaide Ross Smith, *Am. J. Pub. Health*, 24: 821 (August), 1934.

### **The Association between Mortality and Density of Housing**

In Great Britain crowding of houses together up to an average density of 10 people per acre apparently has no effect on child mortality, but at average densities over 20 the relative excess in mortality is now as evident as it was 65 years ago. Statistical material shows that although there is a well defined north to south gradation in mortality rates, there is also a progressive increase in mean density per room and a good case is made for the contention that the gradation in mortality by latitude arises in gradations of overcrowding within the house and no real evidence is obtained that differences in mortality experience in different parts of Great Britain have any relation to climate.

Up to middle life the importance of crowding per room as a factor in mortality appears to be almost double that of density per acre. The author concludes that the effects of overcrowding are by far the most serious at pre-school ages and that here greatest benefits as a result of housing improvements in the future may be expected.

Percy Stocks, *Proc. Roy. Soc. Med.*, 27: 1127 (July), 1934.

### **Epidemiological and Clinical Study of an Influenza Epidemic in a College Community**

An epidemic of influenza which occurred in the autumn of 1932 among the college students at Stanford University was studied in detail as regards epidemiology, clinical manifestations, and complications. Two hundred cases out of a slightly larger number of reported cases were selected for this study. The epidemic reached its peak very rapidly, between November 6th and 14th, then declined rapidly to November 19th. From this date to November 21st a peak was reached similar to the first, followed by a rapid decline in the epidemic. The importance of spread could not be determined with accuracy. In 89 cases who had room mates, only 9 occupants of the same room became ill and of this number 7 became ill in 48 to



72 hours after the onset of illness in the other occupant of the room. There appeared to be some relationship between university gatherings and increase in reported cases. The incubation period appeared to be short, probably 48-72 hours.

In the lower age groups the attack rates were definitely higher. The incidence and disability rate was slightly lower in women than in men students. Total disability was low and in 91 per cent the period of disability was 3 to 5 days. Symptoms were carefully studied and are listed in order of frequency. Complications were not diagnosed in 81 cases. Acute bronchitis and acute sinusitis occurred in 43 cases, acute tonsillitis in 6, and acute otitis media in five. Bronchopneumonia occurred in 11 cases and was fairly mild in all but three.

After recovery a large number suffered from common colds. Other sequelae were residual tachycardia, lowering of the threshold to fatigue, general muscular weakness, and anorexia.

Charles E. Shepard, *Am. J. Pub. Health*, 24: 861 (August), 1934.

### **The Death Rate in Great Britain and Sweden**

Certain interesting regularities in the mortality rate of Great Britain and Sweden are demonstrated and the possible significance of these in interpreting the past and predicting the future is indicated. The earliest decade for which vital statistics are available was chosen as a "standard period", and mortality rates by age groups in succeeding decades expressed in relation to rates in the age groups of the "standard period". The well defined regulations found indicated that relative mortality is apparently constant for a given generation at any age. The authors suggest that the specific death rate is the product of two factors, one a function of age and the other a function of the year of birth. Assuming the validity of explanations offered, future mortality prediction was attempted by extrapolation; that for the 65-and-over group in 1941 and 1951 being 43.8 and 38.0, respectively. If the authors' hypotheses are substantiated, care of children in the first decade would appear to be of supreme importance and of decisive effect at all ages.

W. O. Kermack, A. G. McKendrick, and P. L. McKinlay, *Lancet*, 698-703, March 31, 1934.

### **The Incidence of Tuberculous Infection among Children in New York City**

This survey is based on records of intracutaneous tuberculin tests on 15,000 individuals under 15 years of age for the three-year period 1930-1932. Among 6,080 children admitted to three general hospitals, 13 per cent of the boys and 15 per cent of the girls reacted positively; of those with a "home contact" history, 35 per cent, and of those with a negative history, 10 per cent. Of the

white, 11 per cent reacted positively; of the coloured, 15 per cent. Infants under one year furnished 4 per cent of the reactors; children under 5 years, 9 per cent; those 5 to 10 years, 19 per cent; and those 10 to 15, 29 per cent.

Other sections deal with the incidence of reactors in children attending pre-school clinics, other clinics, and tuberculosis clinics. A comparison of rates, adjusted to a standard child population under 15 years of age, shows 19 per cent reactors in New York, 14 per cent in Chicago and Detroit. The annual fatality rate for the period in New York is figured at 1.3 per 100 infants infected, 0.43 per 100 under five years, 0.052 per 100 of those 5 to 10 years, and 0.035 per 100 of those 10 to 15 years infected. The death rate from tuberculosis among coloured children was 152 per 100,000 as contrasted with 15 per 100,000 in white children.

G. J. Drolet, *Am. J. Tuberc.*, 30: 1 (July), 1934.

### **The Age-Incidence Relations in Diabetes Mellitus**

The data presented in this paper deal with 9,853 cases of true diabetes mellitus and cover the period 1894 to 1933. Calculations from these data indicate that in males the maximum susceptibility to diabetes occurs at 51 years and at 55 years for females. Female susceptibility is less than that of males before the sixth decade but greater thereafter. After the sixth decade susceptibility decreases but the mortality rises steadily with increasing age.

Gregory Pincus, Elliott Joslin and Priscilla White, *Am. J. Med. Sci.*, 188: 116 (July), 1934.

### **Milk-Borne Epidemics in the United States in 1933**

In the United States in 1933 there were 45 epidemics due to milk-borne diseases, involving 1,424 cases, with 38 deaths. Forty-four of the epidemics were due to raw milk and one to sweet cream. The diseases involved were diarrhoea, diphtheria, food poisoning, paratyphoid, scarlet fever, septic sore throat, typhoid and undulant fever. Usually there are about 40 milk-borne epidemics reported each year. In 1932 there were only 27.

There were 4 epidemics of undulant fever in 1933 and none in 1932. The United States Public Health Service reports 1,502 cases and 71 deaths in 1933. Typhoid was responsible for 51 per cent of the epidemics, 22 per cent of the cases, and 63 per cent of the deaths. Typhoid, septic sore throat, and scarlet fever together accounted for 76 per cent of the epidemics, 75 per cent of the cases, and 87 per cent of the deaths. Fifty-one per cent of the epidemics occurred in June, July, August, and September. Rural areas and small cities made up 77 per cent of the 53 communities involved in the epidemics.

*Mich. Pub. Health Bull.*, 22: 125 (July), 1934.



e  
s  
o  
t  
l  
i  
s  
t  
y  
t  
o  
o  
5  
r  
n  
h.  
s  
h  
r  
n  
n  
s  
s  
e  
e  
er  
it  
g  
la  
d  
re  
s,  
s.  
w  
es  
od  
ic  
r.  
ne  
re  
er  
es  
es  
e-  
cs,  
of  
nd  
er  
he  
y-  
in  
ral  
of  
cs.  
34.